

# NAVAL POSTGRADUATE SCHOOL

## Monterey, California



**Economic Impact of Naval Forward Presence:  
Benefits, Linkage and Future Prospects as Modified  
by Trends in Globalization**

by

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December 2001

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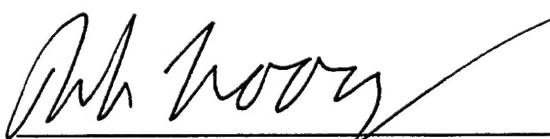
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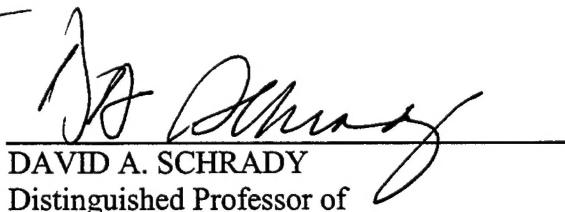
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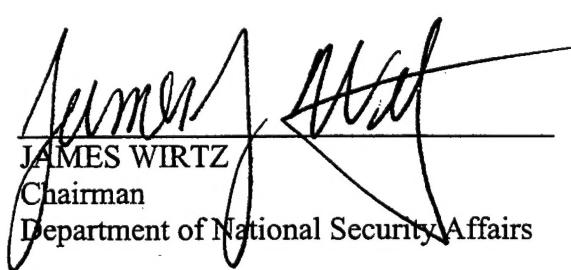


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<b>13. ABSTRACT (Maximum 200 words.)</b> The study extends the analysis of the economic benefits of naval forward presence undertaken by the Naval Postgraduate School in two previous studies: QDR97 and FY2000. The first of those studies developed an operational methodology for quantifying these benefits. Drawing on that methodology, significant economic benefits were found associated with naval operations in the Arabian Gulf. The second study expanded the QDR97 effort in several important directions. First, event analysis was introduced to link naval activity with price movements in key commodity, exchange, and share markets. Second, several additional cases, one not directly involving oil, were developed to assess the generality of our findings. The findings of the first study were confirmed with naval forward presence/crisis response shown to produce extensive economic benefits for the US economy in each of the cases examined. The current study places the two previous ones in a larger context. Here the linkages between naval forward presence/crisis response and oil prices are examined in the context of changes in the global economy and the various dimensions of globalization. An operational procedure is developed to measure the various facets of globalization and track their movements over time. The magnitude of oil price shocks' effect on domestic economies is shown to depend critically on the global environment in which they occur. In all, the three studies paint a similar picture—that of naval forward presence playing an increasingly important role in stabilizing the economies of the advanced industrial nations. Other parts of the world benefit also, although trends in globalization suggest the economic gains that accrue from naval forward presence are of a lower magnitude.						
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## **EXECUTIVE SUMMARY**

Over the years, one of the more illusive questions posed to—and by—the Navy has concerned the potential economic benefits to the United States and allied countries provided by U.S. naval forward presence. While most authorities on the subject contend that these benefits are significant, their measurement has been fraught with conceptual and computational difficulties. The greatest obstacle has involved developing a convincing counterfactual—what would the state of affairs have been in the absence of forward deployed naval forces?

## **THE 1997 QDR AND FY2000 STUDIES**

Our 1997 QDR study of three cases of naval forward presence/crisis response in the Persian Gulf suggested that it is possible to design methodologies capable of quantifying the benefits of naval forward presence. More importantly the benefits in dollars were shown to be significant.

A second study undertaken in FY2000 extended our methodology through: (1) the use of a highly objective statistical analysis; and (2) the development of new test cases. We selected several new instances of naval forward presence/crisis response to provide our sample with greater geographical diversity and a wider range of market impacts. In addition, we took care to assure that these cases involved primarily naval units, with at best limited participation from the other services. The study produced a number of significant findings. As in the first study, this analysis showed that all cases produced positive economic benefits for the U.S. economy. These benefits, measured in 1995 U.S. dollars, were not trivial, with each operation yielding well over a billion dollars in terms of added U.S. GDP.

While oil markets were the one constant throughout the cases, several other markets were affected by naval actions. These included: the dollar/yen exchange rate, the CRB commodity index, the Goldman-Sachs Commodity Index, the S&P-100, the NIKKEI 100, the Hang-Seng, and the New York Stock Exchange Composite Index. More importantly, naval events had a positive effect at all times. In each case involving oil or commodity markets, naval activity reduced the price from what it would have been in the navy's absence. In the case of share markets and the dollar/yen exchange rate, prices were higher than they would have been had naval forces not been involved.

Naval presence was shown to produce a strong short-run (overnight) beneficial effect on markets. More importantly, the analysis found that the

impact of naval response on these markets lingers for a significant time, altering prices long enough to bring significant benefits to the U.S. economy.

## THE CURRENT STUDY

The generalizations noted above can serve as a basis on which to assess future economic impacts associated with naval forward presence/crisis response. With each finding, however, several other questions arise. In particular, the current study addresses the following issues: Can we predict in advance the general magnitude of economic benefits accruing from similar operations? What methods will best accomplish this? What factors need to be taken into account to make an accurate prediction? How might these factors change with the evolution of globalization and increased economic integration? Will changes in the international economic environment likely strengthen or weaken the positive economic impacts associated with naval forward presence/crisis response?

To address these questions, the current study develops an integrated framework for assessing the consequences of globalization on the market forces likely to be affected by naval forward presence/crisis response. This model draws heavily on the rapidly expanding literature on globalization, integrating it with the quantitative findings on economic benefits. In particular, the study focuses on the link between naval forward presence and oil prices. Has globalization over time strengthened or weakened this link? What elements of globalization have been most important in this regard? Are these trends likely to continue into the foreseeable future?

The analysis of globalization and oil price shocks reveals some interesting and unanticipated patterns. First, the study demonstrates that it is possible to develop an operational definition for quantifying globalization. To date, the literature has had a hard time generalizing about globalization and its implications for national economic performance. In large part this is due to the multidimensional nature of globalization.

The analysis developed here shows that globalization comprises four primary dimensions: (1) structural openness—the share of imports and exports in GDP; (2) financial globalization—flows of various forms of capital such as foreign direct investment; (3) global growth—the rate of expansion primarily in imports and exports, but also of the overall economy (as measured by GDP); and (4) general globalization—the growth model best depicting a country's national economic dynamics.

Over time, the first three aspects of globalization—openness, finance and growth—have become more closely associated with the general globalization

dimension, suggesting an increasingly strong link between elements in the global economy and the dynamics of economic growth in individual countries. Largely because of this last dimension it is possible to group most countries in the world according to their pattern of integration into the world economy.

These groups include: (1) endogenous growth countries, characterized by internally generated rapid innovation and technological adaptation. Group 1 includes the main industrial countries of North America, Europe, and Japan/Australia. In the period since 1985, countries in this group have seen a rapid increase in the general globalization dimension of their economies; (2) "catching-up" countries, characterized by increasing general globalization, although at a much slower pace than the endogenous growth countries; increasing structural openness; but declining relative financial globalization. Data limitations made it impossible to undertake a detailed examination of the remaining groups: (3) primary producers; (4) Malthusian or stagnant developing economies—mainly in sub-Saharan Africa; and (5) isolated economies or landlocked economies out of the main stream of international trade and commerce. Groups 1 and 2, however, include those economies that comprise the great bulk of world trade and production.

The second pattern the study found was a clear linkage between the highly globalized countries and the manner in which oil shocks affect their economies. Over time, and contrary to popular assumptions, Group 1 countries have become more vulnerable to oil price shocks, so that a 10 percent increase in the price of oil today would cause a greater reduction in income than it would have twenty years ago. In other words, the loss in income as a percentage of GDP resulting from an oil shock has increased gradually over time in line with the process of globalization.

For these trade-dependent countries, general globalization and structural openness have been most responsible for the increased severity of oil shocks. Changes in financial globalization and the global growth dimension of globalization have not only played a much smaller role in this regard, but have made some countries less vulnerable and others more vulnerable—no clear patterns emerge from these aspects of globalization. Because naval forward presence/crisis response tends to suppress oil shocks and return prices to their equilibrium levels, the role of naval activities in economic stabilization has not only taken on increased importance in recent years but, with the likely continuation of global trends, should play an even greater positive economic role for the United States and other industrial countries in the foreseeable future.

A very different globalization/oil shock pattern characterizes the Group 2 (catch-up) countries. For the members of Group 2 that export oil, the net

effect of oil shocks has been a gradual increase in income. Growth in the general globalization dimension of their economies, however, has lessened the benefit of price shocks to the oil-exporters and increased their vulnerability. For those Group 2 countries that do not export significant quantities of oil, their economies' relative lack of integration into world markets—the openness dimension—has served to insulate them from the worst, though not all, effects of oil-price shocks. As their openness grows, however, the impact of oil shocks on the Group 2 economies will be increasingly severe. Given these patterns, naval forward presence/crisis response should continue to play an important role (though less critical than for Group 1) in stabilizing the catch-up economies.

## **SUMMARY AND IMPLICATIONS**

These findings, combined with likely trends in globalization, suggest that the Navy's forward presence is likely to produce economic benefits to the U.S. economy and those of the other major industrial nations in the years to come. Increased integration of markets should aid in transmitting the Navy's stabilizing effect on markets to countries around the world.

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## **1. INTRODUCTION: GLOBALIZATION AND NAVAL FORWARD PRESENCE**

Current debates over the relative merits of globalization provide some insight into the manner in which market price modifications brought about by naval forward presence affect economies in different parts of the world (Appendix A). In a recent article<sup>1</sup>, Amartya Sen of Cambridge University provides answers to several key questions in this debate that have relevance to the changing economic impact of naval forward presence:

1. Globalization is not new, nor is it just a phenomenon of Westernization. Over thousands of years, globalization has progressed through travel, trade, migration, spread of cultural influences, and dissemination of knowledge and understanding (including science and technology).
2. Globalization is not in itself a folly. It has enriched the world scientifically and culturally, and benefits many people economically as well. In this regard, modern technologies as well as economic interrelationships have influenced development around the world. The predicament of the world's poor cannot be reversed by withholding from them the great advantages of contemporary technology, the well-established efficiency of international trade and exchange, and the social as well as economic merits of living in open, rather than closed societies.
3. The use of the market economy can produce different outcomes. The central question cannot be whether to make use of markets—markets are essential to development of a prosperous economy. The market economy, however, can generate many different results, depending on a large number of variables, e.g., how physical resources are distributed, how human resources are developed, or what rules prevail. States and societies have roles to play in determining the nature and impact of these variables on domestic and global prosperity.
4. The world has changed since the 1944 Bretton Woods Agreement: The current economic, financial, and political architecture of the world (including the World Bank, the International Monetary Fund and other institutions) was largely set up in the 1940s, following the Bretton Woods Conference. This system is now coming under heavy criticism

because it lacks institutions that are responsive to changing economic circumstances; as a result, many parts of the world are not well served by the current structure.

Sen is suggesting that various parts of the world have evolved differently over the last several decades and, as a result, possess economic environments that respond differently to various types of external shocks. The main problem for assessing the economic consequences of naval forward presence is, therefore, to derive an operational classification of these unique environments for the purpose of assessing the differential economic impact produced by naval operations.

## **1.1 COUNTRY CLASSIFICATION SCHEME**

Jeffrey Sachs's recent paper, "Globalization and Patterns of Economic Development," provides a good starting point for assessing various economic environments.<sup>2</sup> The country classification scheme Sachs developed was intended to clarify the consequences of globalization on growth potential in various parts of the world. This scheme seems appropriate for examining the manner in which market changes linked to naval forward presence, such as oil market price movements, diversely affect domestic economies. Sachs developed five main groupings (Table 1): endogenous growth, catching-up, primary, Malthusian, and isolated economies.

### **1.1.1 Endogenous Growth Countries**

Countries that are experiencing endogenous growth benefit from self-sustaining increases in income generated mainly by technological innovation. Innovation raises national income, which in turn stimulates further innovation in a positive feedback process.<sup>3</sup>

For this group of countries, globalization should spur innovation by increasing the range of the market. It may also concentrate innovative activity geographically if it creates a more integrated global labor market for scientists and engineers, who are then likely to aggregate in the highly innovative core economies. Most proxies of innovative activity (patents, R&D expenditures, and

numbers of scientific publications) suggest a huge spurt in such activities in the 1990s. The rapid growth of labor productivity in the United States since the early 1990s also supports the notion of a surge in innovation in line with the increasing globalization of the world economy and labor markets.

By contrast, it is not obvious that globalization is reducing or increasing Group 1 members' vulnerability to oil price shocks. The standard assumption is that information-based economies use less oil per unit of Gross Domestic Product (GDP) and therefore are becoming less dependent on imported energy. In the case of the United States for example, Irwin Stelzer notes that in the 1970s oil products accounted for almost 9% of Gross Domestic Product.<sup>4</sup> Today the figure is about 3%. More efficient car engines are one explanation. Another is the steady shift of the American economy to knowledge driven activities.

The flexibility of endogenous economies and their ability to shift to alternative sources of energy in the short run might also aid in minimizing the economic impact produced by oil price shocks. A good case could be made, however, that increased globalization has greatly expanded the set of macroeconomic linkages between these and many non-endogenous group countries, which may be becoming more vulnerable to oil price shocks as they speed up industrialization. An oil shock-induced recession in these countries could feed back to the endogenous countries, seriously affecting their economies through declining export sales. Ultimately then, the net impact of oil price movements on the endogenous countries can only be assessed through empirical testing.

**Table 1**  
**Initial Categorization of Countries**  
**According to Globalization and Growth Mechanism<sup>5</sup>**

Endogenous Growth	Catching up	Primary Producer	Malthusian	Isolated Economies
Australia	Bangladesh	Algeria	Afghanistan	Armenia
Austria	Bulgaria	Angola	Benin	Azerbaijan
Belgium	China	Bolivia	Botswana	Belarus
Canada	Dominican R.	Camaroon	Burkina	Kazakhstan
Denmark	Hungary	Chile	Faso	Kyrgyzstan
Finland	Indonesia	Congo	Cambodia	Moldova
France	Jamaica	Costa Rica	Central African Republic	Turkmenistan
Germany	Malaysia	Cote d'Ivoire	Chad	Uzbekistan
Hong Kong	Mauritius	Ecuador	Congo, DR	
Ireland	Mexico	Gambia	Eritrea	
Israel	Mongolia	Ghana	Ethiopia	
Italy	Nicaragua	Guinea Bissau	Gabon	
Japan	Oman	Honduras	Guatemala	
South Korea	Philippines	Kenya	Haiti	
Netherlands	Poland	Kuwait	Iraq	
New Zealand	Portugal	Mauritania	Jordan	
Norway	Romania	Mozambique	Laos	
Singapore	South Africa	Nigeria	Lesotho	
Sweden	Spain	Papua New Guinea	Liberia	
Switzerland	Sri Lanka	Saudi Arabia	Mali	
Taiwan	Thailand	Sierra Leone	Namibia	
United	Tunisia	Syria	Nepal	
Kingdom	Turkey	Tanzania	Niger	
United States	Vietnam	Togo	Pakistan	
		Trinidad	Paraguay	
		Uganda	Rwanda	
		United Arab Emirates	Sudan	
		Venezuela	Tajikistan	
		Yemen	Zambia	

### **1.1.2 Catching-up-Growth Countries**

The economy of a country in the “catch-up” (or “follower”) group has a lower level of technology and income than one in the endogenous group. A catch-up country will narrow the income gap with the more technologically capable and richer countries (the “leaders”) through a process of technological diffusion and capital flows from leader to follower.

While all countries enjoy some benefit from technological growth in a leading country, the rate at which technology diffuses from leader to follower differs sharply around the world. A region that is geographically isolated, for example, is much less likely to benefit from technological diffusion.

Two kinds of countries appear to be winners in the race to absorb technologies from abroad. Countries with successful export-promotion policies, such as South Korea and Taiwan, have earned the foreign exchange necessary to import technologies from abroad. Also, countries that have been able to attract large flows of foreign direct investment (FDI) have similarly been able to upgrade technologies with particular success. China, Malaysia, and Singapore were especially notable recipients of large FDI flows in the 1980s and 1990s. More recently, Mexico and Eastern European economies such as Hungary and Poland have similarly been successful in attracting FDI.

Most of the countries in this group are proximate to major markets or are on major international sea lanes and thus face low transport costs for moving goods to major markets. In the Americas, Mexico, several Central American states, and some Caribbean island states successfully attracted high levels of FDI in the 1990s and thereby also benefited from technology transfers. South American countries, further from the U.S. market, have lagged further behind. In Europe, it is the post-communist countries on the border of Western Europe (including the Baltic States, Poland, the Czech Republic, Slovakia, Hungary, Croatia and Slovenia), as well as the North African states bordering the Mediterranean (especially Morocco, Tunisia and Egypt), that have benefited from their geographical proximity to the richer economies of Western Europe to achieve solid catching-up growth. In Asia, the countries proximate to Japan (South Korea, Taiwan, the costal provinces of mainland China) and countries that lie on the sea lanes connecting

Asia and Europe (such as Indonesia, Malaysia, Singapore, Thailand, and Mauritius) have most successfully achieved catching-up growth.

Successful catching-up growth involves a positive feedback loop between technological diffusion and human capital accumulation. Initially, human capital is low in the laggard economy and technologies are rudimentary. The country may achieve some modest inflow of technology by attracting labor intensive, export-oriented foreign direct investment, e.g., labor intensive assembly operations in export processing zones. These simple assembly operations generate income, some modest skills, and the resources to invest in improved education. The combination of rising skill levels and rising educational attainment leads to upgrades in foreign investment facilities.

As with the endogenous-growth countries, it is impossible to say *a priori* much about the extent to which increased globalization is affecting the net impact on these economies of an oil shock. On the one hand, increased globalization has accelerated the long term growth path of these countries (Table 2), suggesting that they may be operating at close to full potential and thus be more vulnerable to oil price increases. On the other hand, with increased diversification these economies may be able to shift to alternative sources of energy, thus avoiding the full brunt of the external shocks. Finally, as in the case of the endogenous growth countries, oil price shocks may impact indirectly through slowing down the growth of major external markets. Again the matter must ultimately be resolved through empirical testing and simulation.

**Table 2**  
**Characteristics of Countries According to**  
**Growth/Globalization Categories<sup>6</sup>**

Country Types	Number of Countries	Total Population for Group (millions)	GNP per Capita (US basis)	Annual GNP Growth per Capita 1990-99	% of Population in Temperate Ecozones	% Population within 100 km of the sea
Endogenous	23	844	20,400	2.1 <sup>c</sup>	76	69
Catching-up	23	2,063	5,599	2.7	28	59
Primary Commodity	32	465	3,694	0.0	9	44
Malthusian	31	466	1,782	-0.3	4	19
Isolated	8	74	2,372	n/a	14	0

### 1.1.3 Resource-based Growth

The resource-based economy experiences high and low cycles of per capita income mainly as the result of resource booms and busts. It has often been noted in recent years that natural resource-rich economies have faired particularly badly (Table 2), especially in comparison with many of the resource-scarce economies. Even oil booms may have an adverse effect on oil producing countries through the so-called “Dutch Disease” mechanisms: an overvalued exchange rate, increased domestic inflation, and a shift to non-trade activities.<sup>7</sup> It is probably safe to conclude, however, given that the Dutch Disease effect is a longer term phenomenon, that the increased globalization of oil producing economies will render the short run effect of an oil price increase positive. Given their rigidity and lack of diversification, non-oil producing countries in the catching-up group would most likely experience declining incomes following oil price shocks, especially as globalization increases their dependence on foreign markets.

#### **1.1.4 Malthusian Decline**

Malthusian decline is a cycle of falling per capita income caused by population pressures outstripping the carrying capacity of the local economy. The Malthusian economy is neither innovating nor successfully adopting technologies from abroad. Countries in this category experience a long-term decline in living standards that transcends the effects of terms-of-trade shocks of cyclical phenomena. Sub-Saharan Africa is the most disturbing case of an impoverished region suffering outright declines in living standards. Somewhat less dramatically, the Andean region seems also to be struck with stagnant or even falling living standards. Given the economic structure of this group of countries, it is probably safe to assume that greater globalization would increase their vulnerability to oil price shocks.

#### **1.1.5 Economic Isolation**

Economic isolation from world markets, whether physical (a small landlocked country) or political (a communistic, command economy), leads to economic stagnation. It is notable that regions that Adam Smith identified in the 18th Century as geographically disadvantaged—the interior of Africa and the landlocked regions of Asia—are still among the poorest and slowest growing in the world today. Smith's observations about the importance of coastal access hold true today even though globalization is linking countries more closely through electronic communications, along with rapid air, rail, and road travel. Sea-based freight is still by far the cheapest form of international transportation, and countries that are far from coastal ports face a tremendous burden in the shipment of bulky products. While some of the non-European landlocked countries have achieved periods of at least modest growth (Bolivia, Botswana and Uganda are three such examples), in general the growth is modest by international standards, and often is the result of catching up to past income levels after an economic disaster or other special factors.

International trade with landlocked, economically isolated countries is sharply hindered by those countries' lack of direct access to a seaport. Foreign investors in particular do not view isolated, impoverished nations as effective platforms for export-oriented foreign direct investment. Thus these countries are

typically unable to attract the kind of assembly operations in garments, electronics, footwear, and other goods that have been important stepping stones to economic development in more favorably located economies. Foreign investors come, if at all, only to exploit primary commodities with a high value per unit weight—such as oil and gas, diamonds and other metals—because such commodities can be profitably exploited even when transport costs are high. Without the diversification and flexibility needed to modify oil price shocks, landlocked countries that are not oil producers are very vulnerable to developments in the international oil market.

## **1.2 QUANTIFICATION METHODOLOGY**

The previous section outlined a framework for examining how trends in globalization may affect the economic benefits derived from naval forward presence. Although the great diversity of economic environments makes generalization in this area very hazardous, several distinctive national economic environments can be identified. It is reasonable to expect that most or all countries in a particular group would be affected in a roughly similar manner by external oil shocks.

Building on this framework, the next section provides an operational method for quantifying these country groupings and, when necessary, reclassifying countries to better reflect a common underlying set of global economic forces. More importantly, the analysis will assess the manner in which globalization has altered the structure of these countries over time, making them more or less vulnerable to oil price shocks. In other words, under increasing globalization, which countries are benefiting more from naval forward presence and to what extent? Which are less affected by the Navy's presence, and by how much?

### **1.2.1 Quantification of Globalization**

One important obstacle to understanding how globalization affects the economic benefits of naval forward presence is that the term globalization means different things to different people and groups. There is, however, a consensus that globalization—whether economic, political, cultural or environmental—is defined by

increasing levels of interdependence over vast distances.<sup>8</sup> A.T. Kearny points out, however, that few people have undertaken the task of actually trying to measure those levels of interdependency. “For instance, how do we determine the extent to which a country has become embedded within the global economy? How do we demonstrate that globalization is racing ahead, rather than just limping along?” The lack of a clear, precise definition underlies many of the current arguments and debates over the extent of globalization and the manner in which that phenomenon is changing the structure of national economies. As the Kearney study notes: “Without the means to quantify the extent of globalization, any meaningful evaluation of its effects will remain elusive.”<sup>9</sup>

### **1.2.2 Previous Attempts at Quantification**

The Kearney approach reverse-engineers globalization and breaks it down into its component parts. On a country-by-country basis, Kearney quantifies the levels of personal contact across national borders by combining data on international travel, international phone calls, and cross-border remittances and other transfers. The Kearney index charts the World Wide Web by assessing not only its growing numbers of users, but also the number of internet hosts and secure servers through which they communicate, find information and conduct business transactions.

The Kearney globalization index also measures economic integration: It tracks the movements of goods and services by examining the changing share of international trade in each country’s economy, and it measures the permeability of national borders through the convergence of domestic and international prices. The index tracks the movements of money by tabulating inward and outward direct foreign investment and portfolio capital flows, as well as income payments and receipts. As the Kearney study makes clear, much of the conventional wisdom cherished by both champions and critics of globalization collapses under the weight of hard data, ranging from the pace and scale of global integration and the characteristics of the digital divide to the impact of globalization on income inequality, democratization, and corruption.<sup>10</sup>

While the Kearney index is a step in the right direction, it still fails to address several basic questions associated with index

construction: (1) What measures should be included in the index; (2) are these measures comparable across countries (i.e., is there a universal standard on what each measure comprises and is the data of equal quality across countries); and, (3) what system of weights will be used to combine the various measures into a final summary index? Clearly each possible (arbitrary) weighting system will provide a somewhat different picture of the extent of globalization in any particular country. These questions need concrete answers before Kearney's or any other index can provide meaningful insights into the globalization process.<sup>11</sup>

### 1.2.3 A New Approach to Quantification

One way around this problem is to compile an extensive data set of the most widely used economic statistics and measures of world trade, capital flows, and economic integration. Although many of these measures will overlap and thus be redundant, the use of "factor analysis" to sort the data will help identify the main dimensions of global diversity.

Factor analysis uses a limited number of underlying dimensions—factors—to explain complex phenomena. The resulting consolidated data produce a limited number of independent (uncorrelated) composite measures. In the current example, measures such as value added per unit of capital, value added per laborer, and value added per firm could provide a composite index of productivity or relative efficiency in factor usage. One advantage of indexes formed in this manner is that they avoid the problem of selecting one measure of efficiency—e.g., value added per worker—over equally logical alternatives.

As an initial step in exploratory data analysis, factor analysis has three objectives: to study the correlations of a large number of variables by clustering the variables into factors such that variables within each factor are highly correlated; to interpret each factor according to the variables belonging to it; and to summarize many variables by a few factors.

The usual factor analysis model expresses each variable as a function of the factors common to several variables and a factor unique to the variable:

$$z_j = a_{j1}F_1 + a_{j2}F_2 + \dots + a_{jm}F_m + U_j$$

Where

$z_j$  = the jth standardized variable

$m$  = the number of factors common to all the variables

$U_j$  = the factor unique to variable  $z_j$

$a_{ji}$  = factor loadings

The number of factors,  $m$ , should be small and the contribution of the unique factors should also be small. The individual factor loadings,  $a_{ji}$ , for each variable should be either very large or very small, so each variable is associated with a minimal number of factors.

To the extent that this factor analysis model is appropriate to the problem at hand, the objectives noted above can be achieved. Variables with high loadings on a factor tend to be highly correlated with each other, while variables that do not have the same loading patterns tend to be less highly correlated. Each factor is interpreted according to the magnitudes of the loadings associated with it.

More importantly for this study, the original variables can be replaced by the factors with little loss of information. Each case (country) receives a score for each factor; these factor scores can be computed as:

$$F_i = b_{i1}z_1 + b_{i2}z_2 + \dots + b_{ip}z_p$$

where  $b_{ij}$  are the factor score coefficients. Factor scores in turn are used in the discriminant analysis that follows. These factor scores generally have less error and are therefore more reliable measures than the original variables. The scores express the degree to which each case possesses the quality or property that the factor describes. The factor scores have a mean of zero and standard deviation of one.

Operationally, the computations of factors and factor scores for each country were obtained through a principle components procedure (available in SPSS) [spell out]. The data used in the analysis was taken from the annual World Bank World Development Indicators (specific details on each variable is presented in Appendix B).

- Domestic absorption (% of GDP)
- Domestic credit provided by banking sector (% of GDP)
- Expenditure, total (% of GDP)
- Trade (% of GDP)

- Trade (% of goods GDP)
- Imports of goods and services (% of GDP)
- Financing from abroad (% of GDP)
- Foreign direct investment, net inflows (% of GDP)
- Exports of goods and services (% of GDP)
- Domestic financing, total (% of GDP)
- Gross private capital flows (% of GDP, PPP)
- Telephone mainlines (per 1,000 people)
- Gross foreign direct investment (% of GDP, PPP)
- GDP growth (annual %)
- Import Growth (annual %)
- Exports of goods and services (annual % growth)
- Sub-Saharan Dummy
- Small Country Dummy
- Oil dummy
- Revised Country Classification

#### **1.2.4 Quantified Dimensions of Globalization**

While the exact composition of factors varied slightly from year to year over the analysis period (1985-97), the 20 variables generally produced five main dimensions, or factors:

1. Structural Openness depicts the degree of national economic integration into the world economy. Operationally, this factor comprises the share of imports and exports as a percentage of GDP. The variables comprising structural openness do not change much over time, and this usually is the first factor to be extracted from the data set.
2. General Globalization (for lack of a better term) incorporates those variables that load on Sachs's country grouping dimension (Table 1). This study also expands Sachs's list of countries to include several additions, such as Brazil. The number of variables loading on this factor increases considerably over time, with the factor incorporating an increasingly diverse set of global indices. The study makes clear that globalization affects each of the different country groupings in unique ways, and that globalization is an on-going process.
3. Finance comprises both domestic and foreign components, for example, foreign direct investment and financing from abroad.

4. Growth/Trade Expansion includes both external and internal measures of economic expansion. The main variables that make up this factor are import and export growth, and overall GDP growth. The growth of GDP usually, but not always, is highly correlated with measures of trade expansion.
5. Global Structure comprises several structural variables (Appendix C) to take into account several unique country characteristics. The Sub-Saharan African countries, for instance, may have a unique set of factors that sets them apart from other developing countries.<sup>12</sup> To take this potential factor into account, a variable (SUBAF) was created that gives a score of zero to the non-African countries and a one to the African nations.

Researchers also contend that small countries, with much narrower resource bases and smaller domestic markets, are at a disadvantage vis à vis their larger counterparts.<sup>13</sup> To take this effect into account, the study utilizes a unique variable with a value of one assigned to the smaller nations (usually those with a population less than 5 million), and a zero for the larger countries.

Finally, studies stress the unique structure of the oil economies.<sup>14</sup> This factor is taken into account with a final variable "oil" which assigns a value of one to the oil economies and a zero to non-oil nations.

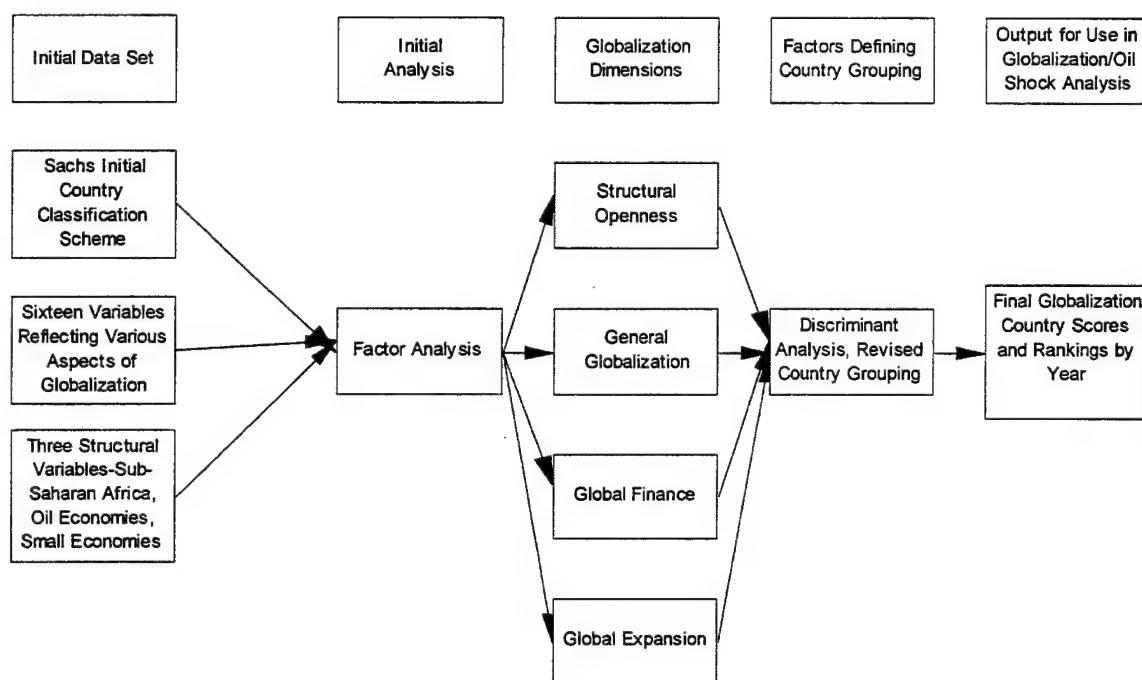
### 1.2.5 Revised Factor Scores and Country Groupings

Because Sachs's classification was intended to examine the growth potential of a large group of countries, his country groupings may not be ideal for the identification of differential impacts on unique economic environments stemming from oil price shocks. Also, Sachs's classification scheme appears to be static. There is little evidence of movement between groups, or a precise indication of the circumstances under which movement might take place. In the case of economic environments, we would expect discernable shifting between groups as countries and their economic policies evolve.

To overcome these limitations, this study used the following procedure (Figure 1; the results for a typical year, 1995, are presented in Appendix D):

First, for each year examined, a factor analysis was undertaken using the 20 variables noted above. In 1995, 54 countries had complete data observations for this period and were retained in the analysis (Table D-1). The 20-variable data set was comprised of five main dimensions or factors (based on the constraint of an eigen value of one or greater).

**Figure 1**  
**Globalization and Country Economic Environments**



Sachs's country classification term was included in the second factor, along with gross private capital flows, export share in GDP, and gross foreign direct investment. These variables differed significantly by country grouping. The country factor scores on each dimension are based on a scale with a mean of zero. Positive numbers indicate above-normal attainment of a particular factor or global dimension, while negative values indicate that the country/group is below average in attainment of that dimension.

For example, in 1995 the trade patterns of the United States accounted for a considerably smaller share of GDP than the sample norm. The United States was even well below the norm of the endogenous growth countries (Group 1). The United States was considerably above the sample average for its attainment of General Globalization (Dimension 2), but again considerably below the norm for Group 1. The United States was, however, slightly above the norm even for Group 1 for global financial flows. Finally, the United States had above-average growth during this period, again somewhat above that of the Group 1 countries. The global structure dimension is an amalgamation of variables that do not load on one of the main globalization dimensions, so its significance is hard to interpret. It is included here to show the complete results of the analysis.

Second, using the country factor scores from this step, a discriminant analysis was undertaken to assign a new set of country groupings. The five main dimensions of globalization noted above were weighted in assigning countries to one of the five groups as follows. For 1995 (Table D-2 in Appendix D) two dimensions, general globalization and trade expansion, were statistically significant in separating the sample countries into five main groupings. Of these groups, 1 and 3 were the most dissimilar (Table D-5), followed by 1 and 4, and 1 and 2. Of the original country classifications, 71.7 percent (Table D-8) remained in their initial groups, with the remainder assigned to new groups. For example, South Korea had only an 8.3 percent chance of being a Group 1 country, but a 90.3 percent chance of correctly falling into Group 2 (Table D-7).

The results from this discriminant analysis therefore are tailored to the needs of this study, whereas the Sachs table is not. These revised groupings provide a more homogenous sample for the analysis that follows (illustrated by the improved probabilities by group in Table D-15), and comprise the country sets used for the remainder of the analysis for each year. It is important to note, however, that as circumstances change, we would get a slightly different grouping for each year. The results for 1995 only are listed for illustrative purposes.<sup>15</sup>

The third step entailed redefining the country classification variable from the results of the second step. Here, the factor analysis was rerun to generate a new set of factor scores, more

reflective of each country's position in the total sample and in its assigned group (Table D-9). Of the countries that remained in the analysis after the factor/discriminate step, only nineteen were found to have sufficient time series data to facilitate the VAR analysis.

Finally, using these scores, a new discriminant analysis found that General Globalization (Factor 2) and Global Expansion (Factor 3) were statistically significant in assigning countries to the five-group model. On this basis, the probability of correct placement in one of the five groups was 92.6 percent, with all of the Group 1 countries correctly placed. This last step provides the country groupings and factor scores used in the oil price impact analysis. The analysis was undertaken for 1977, 1980, 1983 and each year over the 1985-1997 interval.

### **1.3 GLOBALIZATION AND THE STRENGTH OF OIL SHOCKS**

The revised factor scores or globalization dimensions for each country are a key element in assessing the manner in which oil price shocks have been modified over time by changes in the world economy. Using the United States as an example, the link between oil price shocks and globalization is outlined in Figure 2.

As a starting point, a macroeconomic model was constructed for each of the nineteen countries examined. In the case of the United States economy, the model consisted of three endogenous macroeconomic variables: gross capital formation, government consumption, and exports (all at constant dollar prices); and three exogenous variables: Japanese constant-price GDP, the dollar/SDR exchange rate, and world oil prices. A first set of simulations for each year (1985-97) was made using the historical values for oil prices. A second set of simulations was made assuming a 10 percent increase in the price of oil for each base year. The net impact on GDP was then calculated by subtracting the simulations incorporating oil price shocks from the historical series. Oil shock impacts were calculated for the shock year and two subsequent years. Finally, the resulting oil shocks were put through a regression analysis on the various globalization dimensions to assess the role that changes in a country's level of globalization might have had in

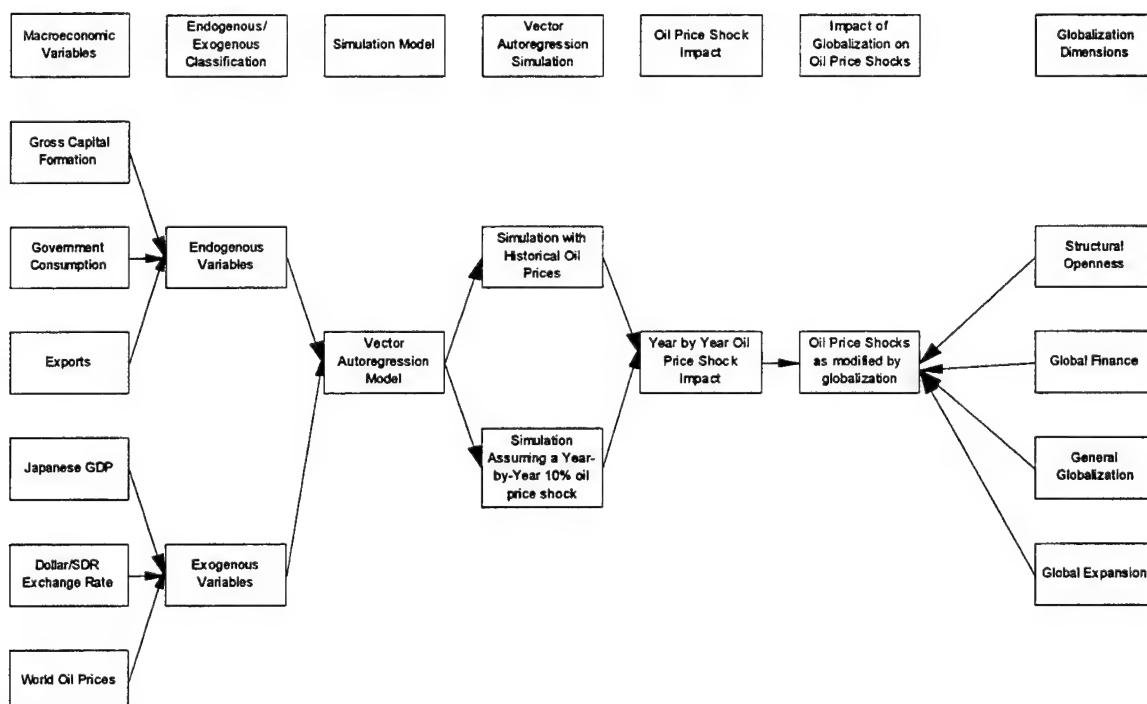
modifying the manner in which oil prices altered that country's GDP.

Based on these findings, implications were drawn (Figures 2 and 3) for the likely future role of naval forward presence/crisis response. On the one hand, for example, if the size of oil price shocks grows over time for a particular country, then naval forward presence, by limiting the rise of oil prices, would play an increasingly important role in stabilizing that country's GDP. On the other hand, if the dimensions of globalization lessened the loss in a country's GDP associated with oil price shocks, then the importance of naval forward presence to that country's economy would decline.

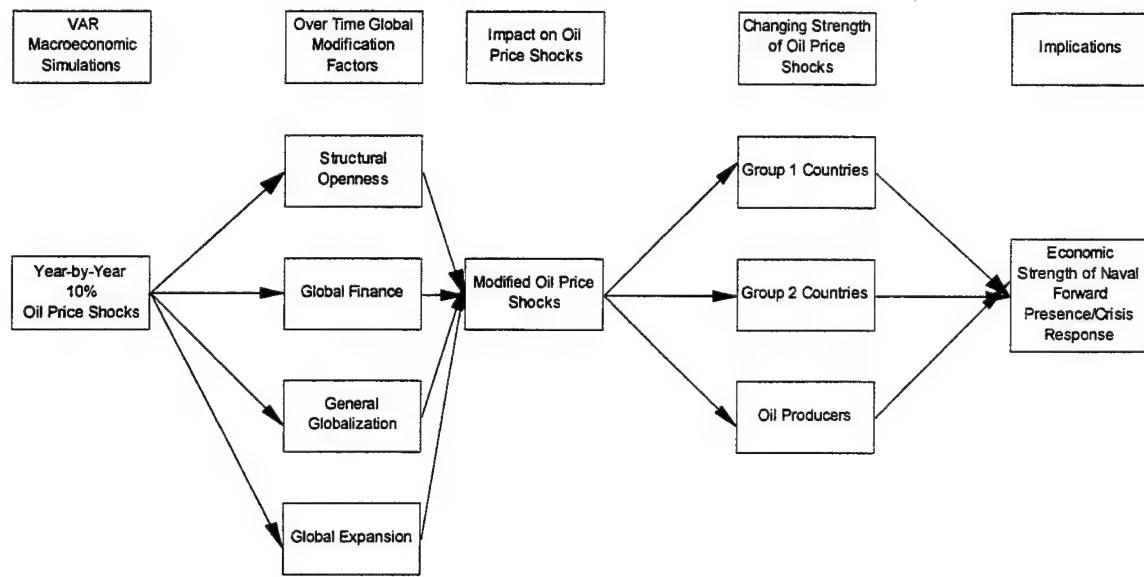
### 1.3 ECONOMIC IMPACT OF NAVAL FORWARD PRESENCE

This study analyzes a sample of 19 countries using the framework outlined above to determine the changing strength of oil price shocks. Based on this analysis, the study draws a number of generalizations for two of the country groupings concerning the likely future economic role naval forward presence will play in their growth and development.

**Figure 2**  
**United States: Globalization Impact on Oil Price Shocks**



**Figure 3**  
**Implications of Globalization For Naval Forward Presence**



## **2. PATTERNS OF GLOBALIZATION IN DEVELOPED COUNTRIES (COUNTRY PROFILES)**

This chapter is divided into two sections. The first section profiles fourteen endogenous growth countries (Australia, Austria, Canada, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Spain, Sweden, the United Kingdom, and the United States), while the second section includes five catching-up countries (Mexico, the Philippines, Portugal, the Republic of Korea, and South Africa). Selection was limited to those countries that had sufficient data available for the period of study (1985-1997). No countries in the primary producer, Malthusian, or isolated categories provided enough data to make inclusion in this study possible.

Each profile in turn is divided into three parts (with the exception of the United States, which includes a more in-depth look at the U.S. economy): *Patterns of Globalization* describes the background and present characteristics of the country's economy; *Globalization and Oil Price Shocks* examines the interplay of globalization factors and oil shocks, and their combined impact on the economy in question; and *Implications for Naval Forward Presence* draws conclusions about the ability of naval operations to benefit, or in some cases hinder, economic growth in that country.

### **2.1 GROUP ONE: THE ENDOGENOUS GROWTH COUNTRIES**

#### **2.1.1 Australia**

Australia is a Group 1 country whose economy has become significantly integrated since the implementation of reforms in the mid-1980s. Australia's high rate of economic growth has somewhat mitigated the magnitude of oil price shocks by reducing oil's share of GDP (Figures 5 and 6). Nevertheless, the share of lost income in GDP has been increasing since 1994. The current slowdown in Australia's growth will no doubt contribute to any increase in the share of GDP lost following a sharp rise in oil prices.<sup>16</sup> These findings indicate that future naval forward presence/crisis response will be significantly beneficial to Australia's economic growth.

### **2.1.1.1 Patterns of Globalization**

The Australian government has initiated a number of reforms over the last 15 years designed to make its economy more competitive in global markets.<sup>17</sup> These reforms have improved economic performance to the point where recent growth has averaged around 4% per annum, with marked improvements in productivity. This has occurred in an environment of relatively low rates of inflation and unemployment. Another outcome of the reforms has been a fairly dramatic increase in several globalization dimensions (Table 3, Fig 4).

In addition to enhancing the global growth dimension of the Australian economy, the reforms also have contributed to the dramatic increase in the country's general globalization factor. In addition, the financial flow dimension has shown a distinct increase over time. In contrast, Australia's relative trade openness has declined somewhat during this period.

Previous macroeconomic assessments of the Australian economy have found it susceptible to a number of demand and supply shocks. Ramon Moreno found that shocks to technology raise output and lower the price level, while shocks to demand temporarily raise output and permanently raise the price level.<sup>18</sup> Moreno found that supply shocks in Australia are dominated by shocks to technology, with shocks to the labor supply or the oil price level playing a smaller role. His analysis suggests that demand shocks are dominant in determining fluctuations in output at a one-quarter horizon, but supply shocks assume the larger role at longer horizons. Supply shocks also account for most of the fluctuations in the Australian price level.

### **2.1.1.2 Globalization and Oil Price Shocks**

While Moreno's study provides some valuable insights into how the Australian economy has adjusted to oil price shocks, his work is somewhat dated, and fails to examine systematically the trends in globalization noted in this study. Regression analysis of the four globalization factors on a year-by-year, 10 percent oil price increase suggests (Figure 4) that several have served to increase the loss in GDP brought about by these external shocks. This pattern holds for the three measures of lost GDP: the cumulative absolute amount, the cumulative amount as a percent of GDP, and the year-by-year amount for the shock and two subsequent years. The

general globalization dimension is significant for all years examined. Increased openness also appears to be reinforcing this pattern of increased vulnerability, although chiefly in the impact year and subsequent year. Increased global financial flows also contributed to the loss in income associated with the oil price shocks. In this case, the effect probably is a significant factor in the year following the oil price shock. Finally, in Australia's case increased growth and trade expansion does not appear to create increased vulnerability to oil price shocks.

#### **2.1.1.3 Implications for Naval Forward Presence**

With so many globalization factors working to increase the severity of oil price shocks, the ability of naval forward presence/crisis response to reduce the magnitude of oil price increases associated with a conflict would play a significant role in contributing to Australia's economic health.

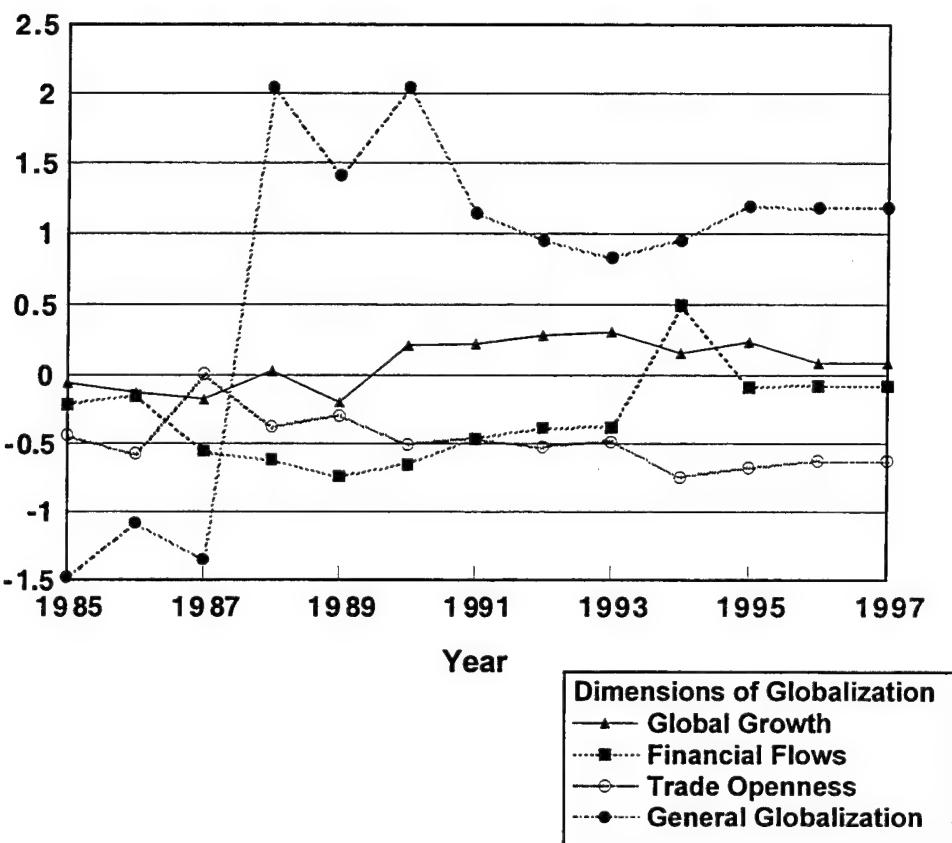
**Table 3**  
**Dimensions of Globalization: Australia 1988-1996**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Australia	-0.375	2.046	-0.616	0.028
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Australia	-0.297	1.142	-0.742	-0.200
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Australia	-0.507	1.047	-0.654	0.209
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Australia	-0.468	1.143	-0.468	0.219
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132

1992	Australia	-0.525	0.951	-0.385	0.282
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Australia	-0.488	0.830	-0.384	0.305
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Australia	-0.747	0.951	0.473	0.155
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Australia	-0.677	1.191	-0.085	0.236
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706
1996	Australia	-0.626	1.182	-0.076	0.083
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
Average	Australia	-0.523	1.165	-0.326	0.146
	Group 1	-0.153	1.492	-0.089	-0.144
	Group 2	0.146	-0.089	-0.204	0.264

**Figure 4**

### **Patterns of Globalization: Australia**



**Factor Scores: Globalization Dimensions**

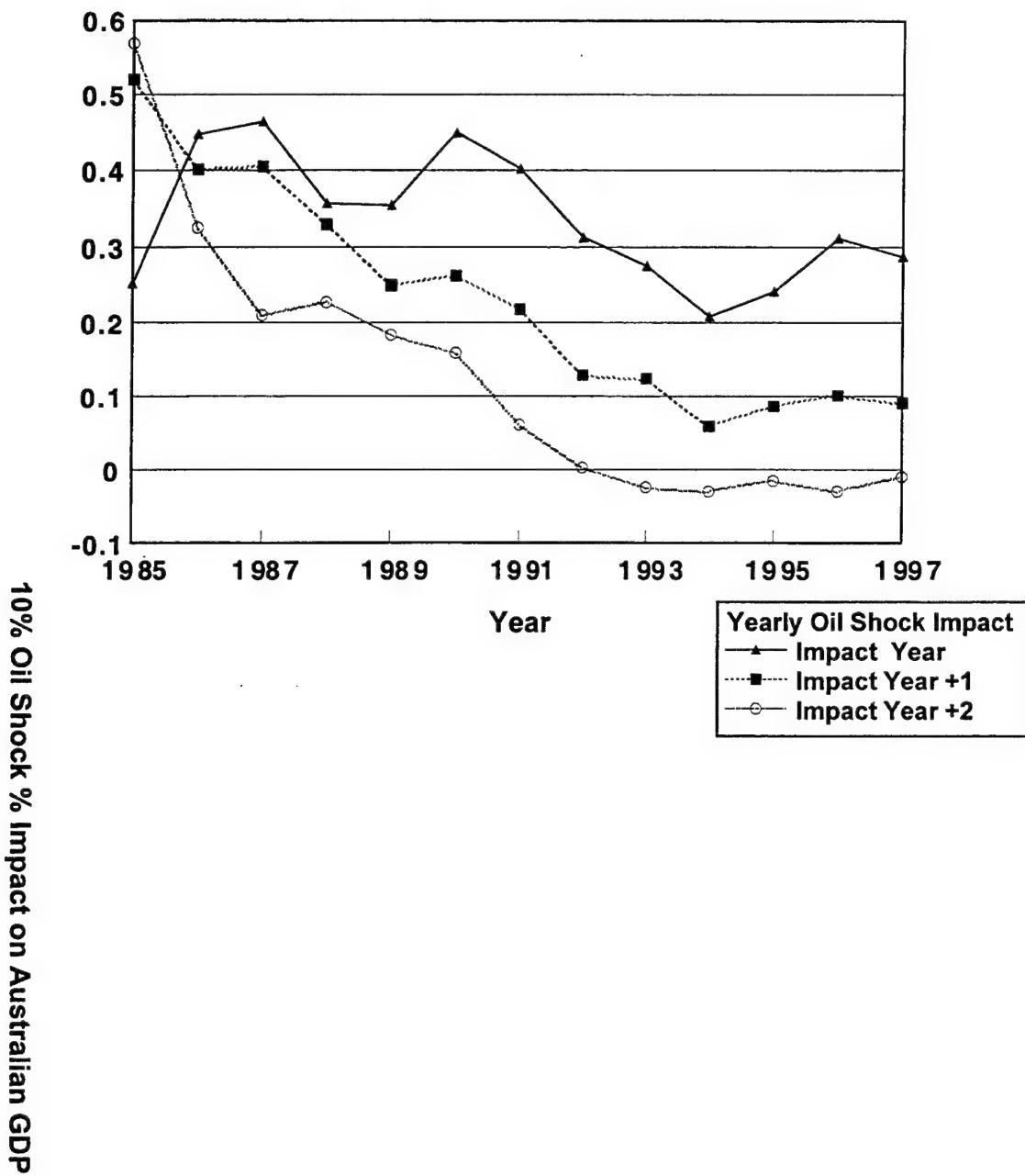
**Table 4**  
**Summary Oil Shock Impact Analysis: Australia**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	+	ins	ins
Impact Year + 1	+	+	+	ins
Impact Year +2	+	+	+	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	+	+	ins
Impact Year + 1	+	+	+	ins
Impact Year +2	+	+	+	ins
<b><u>Yearly</u></b>				
Impact Year	+	+	ins	ins
Impact Year + 1	+	+	+	ins
Impact Year +2	+	ins	ins	ins

Notes: Group 1 country. Australian data used. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

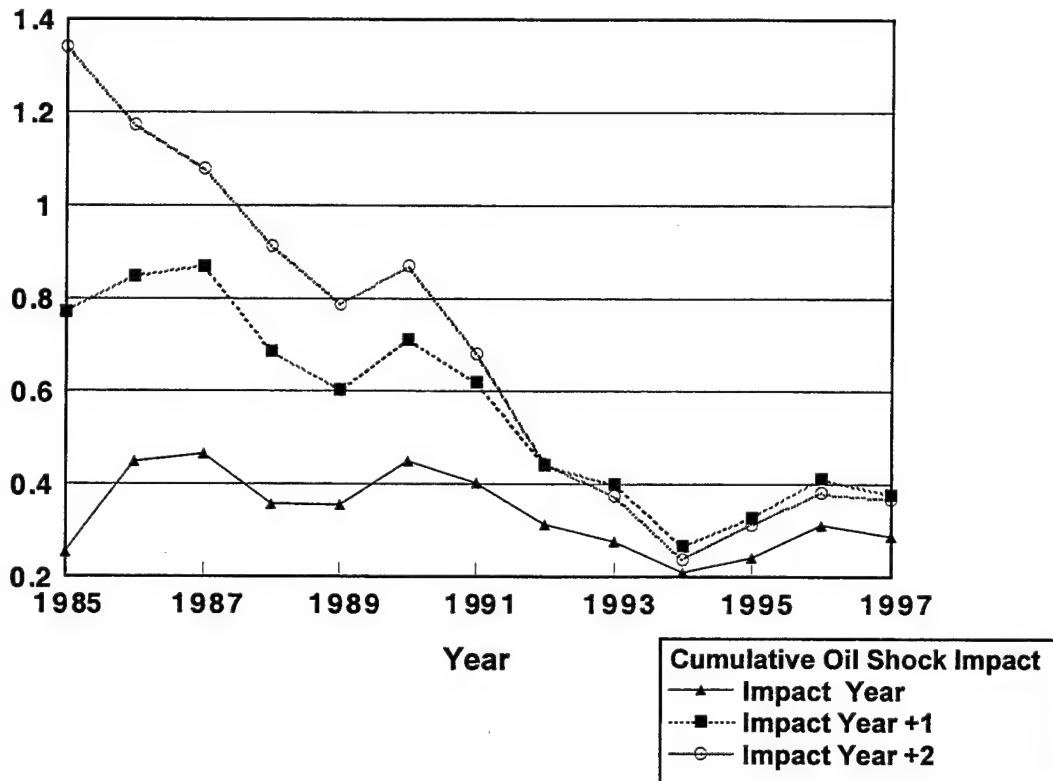
**Figure 5**

### **Yearly Oil Shock Impact: Australia**



**Figure 6**

### Cumulative Oil Shock Impact: Australia



10% Oil Shock % Impact on Australian GDP

## **2.1.2 Austria**

Austria is a Group 1 country undergoing significant economic restructuring due in part to pressure from exogenous circumstances. Its producers are increasingly vulnerable to competition from the newly opened economies and educated, cheap labor of countries in Eastern and Central Europe, and from the introduction of a single currency to the European Union. Although its financial globalization dimension has increased faster than any other dimension, Austria remains within the mainstream of Group 1 countries.

The net effect of Austria's globalization has been to increase the share of GDP lost following an oil price shock. Price stabilization through naval forward presence/crisis response will be important to Austria's future economic growth as it continues to open its economy to global forces.

### ***2.1.2.1 Patterns of Globalization***

Throughout most of the postwar era, Austria, like other countries with small, open and vulnerable economies, opted for a variety of economic and social policies that prevented the costs of opening to international markets forces from causing political instability.<sup>19</sup> The Austrian government had full employment as its primary economic goal. It promoted investment and maintained a relatively large public sector of nationalized industries. Wage and price increases stayed stable within a corporatist system, while Keynesian deficit spending was complemented by a hard currency policy. In addition, a comprehensive regulatory system imposed restraint on the financial markets. Achieved via the control of currency transactions, this regulatory environment put the government in a strong position to manage its national economy.

By the mid-1980s, the process of globalization was well underway in Austria. Together with Ireland and Canada, Austria showed the highest degree of foreign penetration among Organization for Economic Cooperation and Development (OECD) states in the mid-1980s. Furthermore, the globalization of financial markets put increasing pressure on Austria to liberalize its own financial markets. Partly because of this pressure, partly in order to shadow developments within the European Community (EC), Austrian capital markets were gradually liberalized between 1986 and 1991. These changes in the production and finance structures

served to create forces for market linearization and asset privatization throughout the economy.

The 1990s were a decade of unprecedented change for Austria, in which rising competitive pressure was a constant theme. The opening of the Central and Eastern European economies in 1990, followed by Austria's accession to the European Union (EU) in 1995 and the advent of the Euro, the Union's single currency, in 1999, have all played a part in forcing structural changes to Austria's economy. Globalization is likely to mean that the pressure remains unrelenting.

Of these events, the opening of the reform economies of Central and Eastern Europe has been of particular significance. Austria's border with former Eastern Bloc countries is the longest of any EU member state. This proximity gave Austria the opportunity to build on traditional links with these countries, both via direct investment in them from Austria, and through the increasing use of Austria as a location for regional headquarters by companies wishing to establish a presence in the area.<sup>20</sup> On the negative side, however, is a growing competitive challenge for Austrian industries from the Czech Republic, Slovakia, Hungary, and Slovenia—immediate neighbors that have well-trained, industrialized, but exceedingly cheap labor forces. The result has been that several of Austria's low-technology industries producing intermediate goods have seen their production severely curtailed.

Due at least in part to these various developments, the globalization process in Austria has been erratic, most notably with the expansion of the general globalization dimension since 1989 (Table 5, Figure 7). While financial liberalization has been extensive, this dimension has not increased any faster for Austria than for most of the other Group 1 countries. The same applies to the trade openness dimension, while the global growth dimension has declined slightly relative to the progress made by other countries during this period.

In short, rapid structural realignment is likely to be a feature of the Austrian economic environment for some time. The economic capabilities of Central and Eastern Europe will grow quickly as infrastructure develops and skills improve, and rising productivity attracts greater capital inflows. Although capital flow is only one aspect of the ongoing globalization of economic activity, it is the one that is of most significance to Austria.

### **2.1.2.2 Globalization and Oil Price Shocks**

Globalization has had some impact (Table 6) on the ability of oil price movements to lower Austrian GDP. The changes brought about by globalization, however, seem primarily to be short term. Reductions in GDP stemming from an oil shock, combined with a larger globalization dimension, occur only in the impact year (Figures 8 and 9). The openness dimension appears to have a longer term effect, but this may be offset somewhat by the financial dimension. When regressed on the size of the GDP change stemming from an oil price shock, the financial dimension had a negative sign for the year following the oil price shock, suggesting that liberalization in this area created forces tending to stimulate GDP.

### **2.1.2.3 Implications for Naval Forward Presence**

In the 1990s there was relative stability in the economic costs associated with oil price increases. Nevertheless, these costs were still relatively high and any price reduction brought about by naval forward presence/crisis response would be significant. The cumulative GDP losses to the Austrian economy in recent years have begun to increase (Figure 9), suggesting even higher future benefits to Austria stemming from naval forward presence/crisis response.

**Table 5**  
**Dimensions of Globalization: Austria 1988-1996**

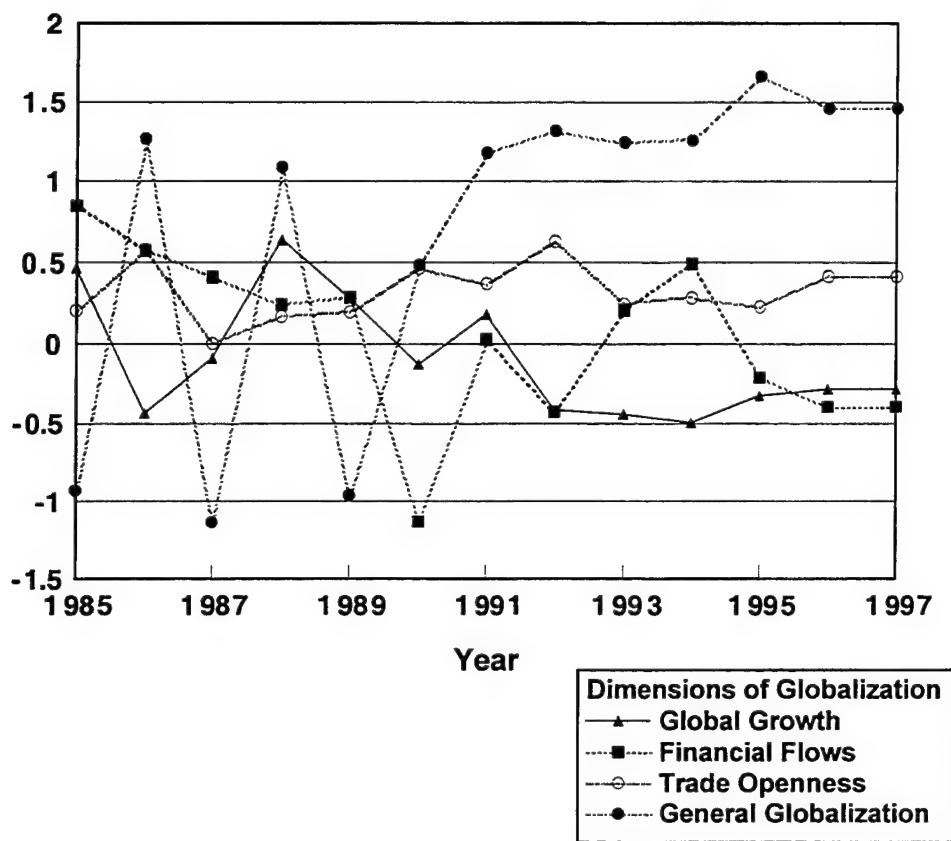
Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Austria	0.169	1.090	0.243	0.640
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Austria	0.197	0.849	0.286	0.280
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Austria	0.467	0.486	-1.131	-0.126
	Group 1	-0.024	1.387	-0.722	-0.109

	Group 2	-0.027	-0.481	-0.600	0.037
1991	Austria	0.372	1.181	0.027	0.182
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Austria	0.631	1.319	-0.423	-0.414
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Austria	0.246	1.247	0.209	-0.441
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Austria	0.284	1.259	0.494	-0.498
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Austria	0.229	1.665	-0.208	-0.325
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706
1996	Austria	0.416	1.462	-0.393	-0.282
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
Average	Austria	0.335	1.173	-0.100	-0.109
	Group 1	-0.153	1.492	-0.089	-0.144
	Group 2	0.146	-0.089	-0.204	0.264

**Figure 7**

### **Patterns of Globalization: Austria**

**Factor Scores: Globalization Dimensions**



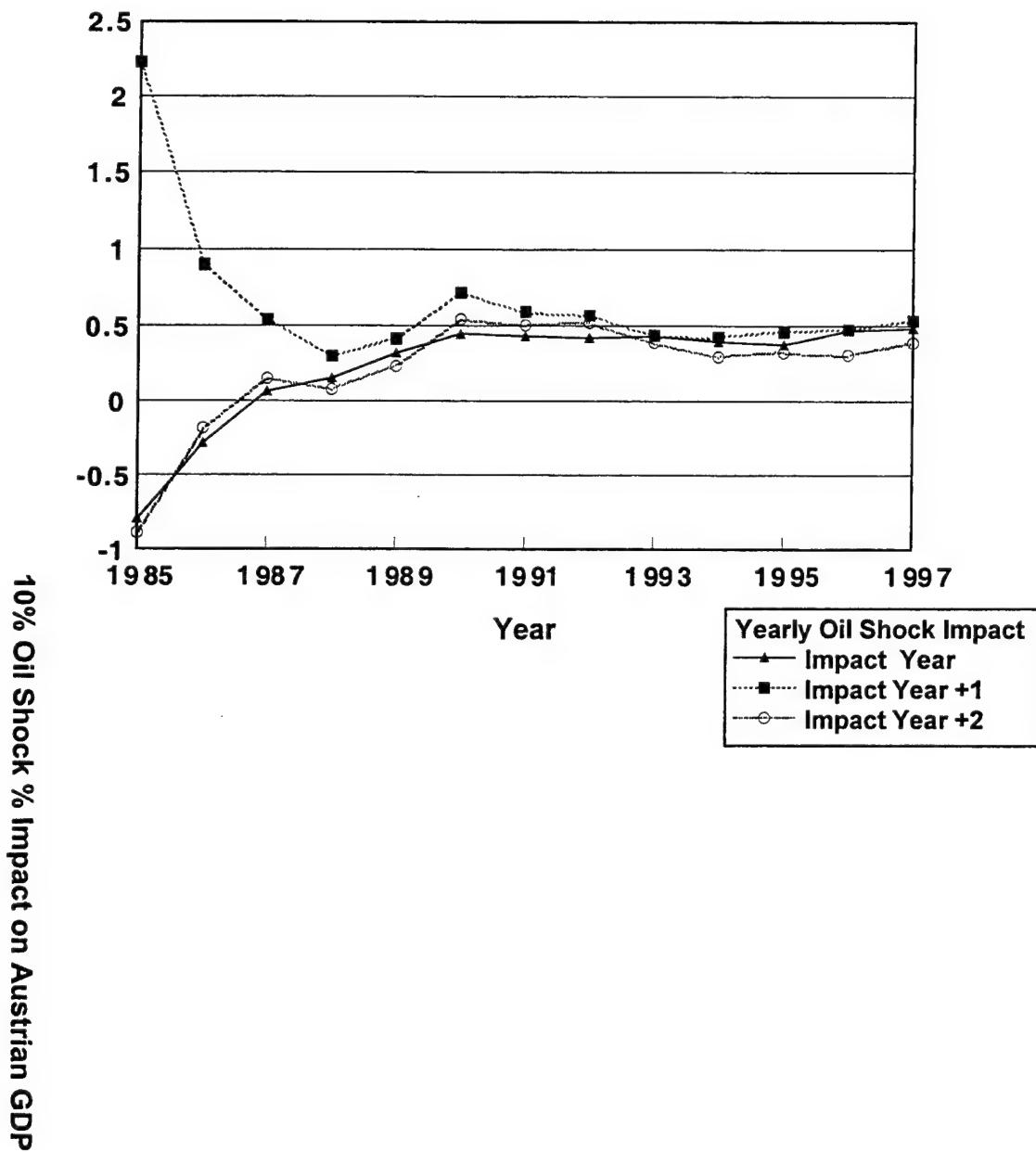
**Table 6**  
**Summary Oil Shock Impact Analysis: Austria**

Period of Impact Dimensions	Globalization			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	ins	ins	(-)	(-)
Impact Year +2	ins	+	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	ins	+	ins	ins
Impact Year +2	ins	+	ins	+
<b><u>Yearly</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	ins	ins	(-)	ins
Impact Year +2	ins	ins	ins	ins

Notes: Group 1 country. Austrian data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

**Figure 8**

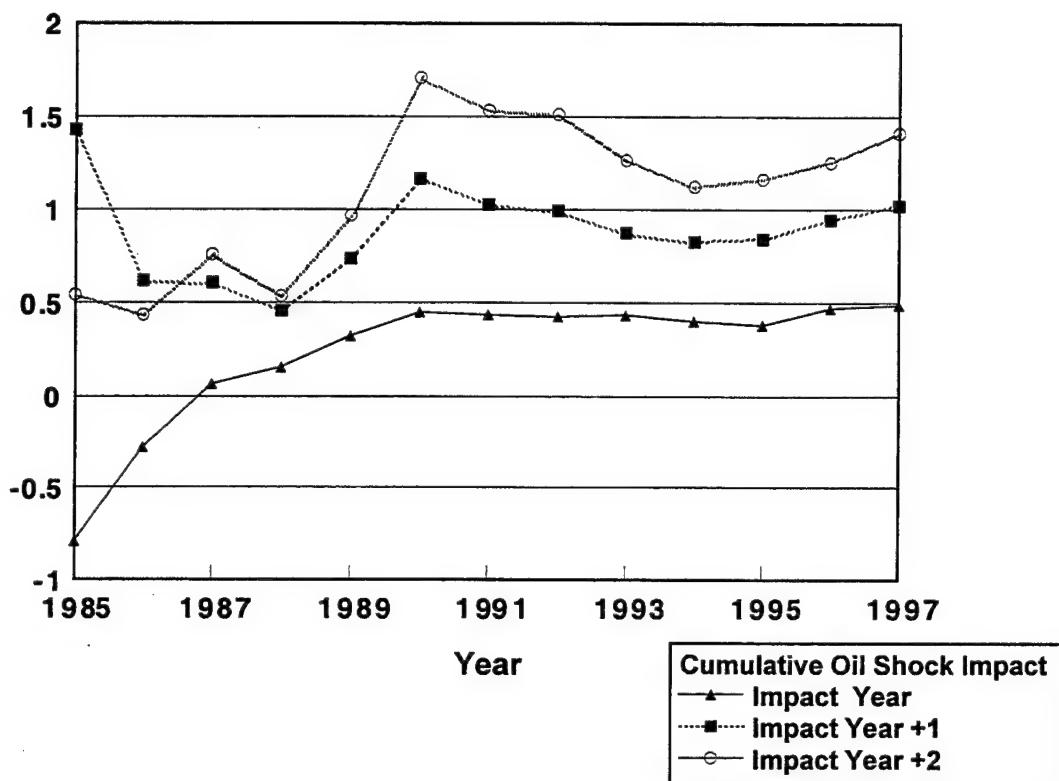
### **Yearly Oil Shock Impact: Austria**



10% Oil Shock % Impact on Austrian GDP

**Figure 9**

## Cumulative Oil Shock Impact: Austria



10% Oil Shock % Impact on Austrian GDP

### **2.1.3 Canada**

A Group 1 country, Canada has a strong economy that has become highly integrated into global trade in goods, services, and capital, most notably with the advent of free trade agreements with the United States and Latin America in the early 1990s. Although Canada is a hydrocarbon producer, it is still adversely affected by increases in the international price of oil. The year by year analysis of oil shocks indicates that this phenomenon is increasing in severity (Figure 14), especially when measured on a cumulative basis (Figure 15). With increased future globalization, these trends are likely to continue, making Canada an important beneficiary of naval forward presence/crisis response.

#### ***2.1.3.1 Patterns of Globalization***

Since Confederation in 1867, Canada has been closely linked to the wider global economy. It began as part of the British Empire and benefited from associated systems of preferential tariffs, ownership and investment by British-based companies. Following World II, Canada shifted into the American orbit as it became an important component of the Western Hemisphere and North American trade, technology and investment flows. Europe, however, has continued to be an important Canadian export market and significant source of foreign investment in Canada.

The last stages of protective Canadian economic policy were played out in the early 1980s. They largely ended with entry into the Canada/United States Free Trade Agreement and the North American Free Trade Agreement (NAFTA). Since then, the country has been looking for new ways to assert its international economic strengths.

Unfortunately, the data needed to estimate Canada's globalization dimensions were not available after 1993 (Figure 10). Still, a brief examination of the data (Table 9) prior to that year put the country squarely in Group 1 as having an endogenous growth economy. Canada is highly integrated into the world economy through both trade and financial flows. Beginning in 1999, Canadian businesses have been exporting and importing more than \$2.2 billion worth of goods and services each day. In 1999 exports increased 11% to \$412 billion, or 43% of the country's GDP. In that

same year, \$36 billion in direct investment flowed into Canada, bringing the stock of foreign direct investment in Canadian enterprises to \$240 billion.<sup>21</sup>

#### **2.1.3.2 Globalization and Oil Price Shocks**

Canada's current degree of vulnerability to oil price shocks was determined using pre-1994 data and extrapolating subsequent trends, on the assumption that Canada has followed a typical Group 1 evolution in its globalization dimensions. Using this method, several statistical links (Table 8) were found between these dimensions and the size of an oil shock impact on the economy. The general globalization dimension in particular was positive and highly significant during this study's focus period in exacerbating GDP loss following an oil price increase. The global growth dimension reinforced this pattern, although its effect seems to be shorter term. Because both of the globalization dimensions had positive signs, we can conclude that Canadian globalization has increased the severity of oil shocks in terms of lost GDP.

#### **2.1.3.3 Implications for Naval Forward Presence**

The ability of naval forward presence to limit oil price increases during periods of crisis response would no doubt provide growing benefits to the Canadian economy into the foreseeable future.

**Table 7**

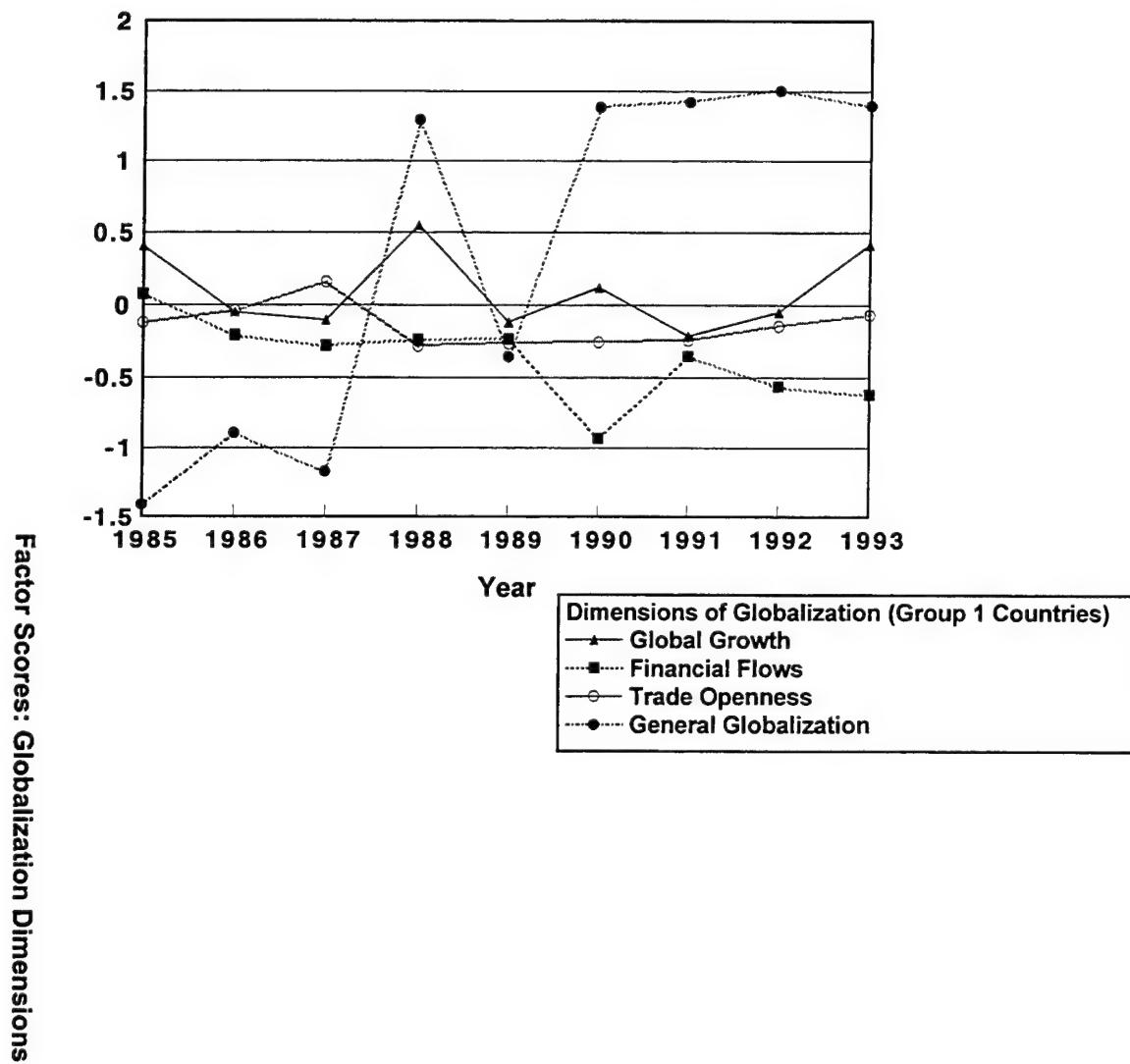
		<b>Dimensions of Globalization: Canada 1985-1993</b>			
<b>Year</b>		<b>Structural Openness</b>	<b>General Globalization</b>	<b>Financial Globalization</b>	<b>Global Growth</b>
1985	Canada	-0.120	-1.410	0.074	0.402
	Group 1	0.111	-1.367	0.342	0.100
	Group 2	-0.334	-0.239	0.080	-0.009
1986	Canada	-0.038	-0.892	-0.206	-0.048
	Group 1	0.113	-1.162	0.122	-0.134
	Group 2	-0.022	-0.400	-0.261	0.002
1987	Canada	0.158	-1.169	-0.279	-0.104
	Group 1	-0.007	-1.292	0.020	0.050
	Group 2	0.031	-0.182	-0.203	0.083
1988	Canada	-0.282	1.297	-0.239	0.546
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Canada	-0.265	0.780	-0.232	-0.120
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Canada	-0.255	0.681	-0.929	0.117
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Canada	-0.243	1.275	-0.349	-0.215
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Canada	-0.144	1.140	-0.561	-0.051
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Canada	-0.068	1.200	-0.619	0.412

	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
Average	Canada	-0.210	1.062	-0.488	0.115
1988-93	Group 1	-0.100	1.425	-0.130	-0.126
	Group 2	0.123	-0.126	-0.189	0.231

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**Figure 10**

### **Patterns of Globalization: Canada**



**Table 8**

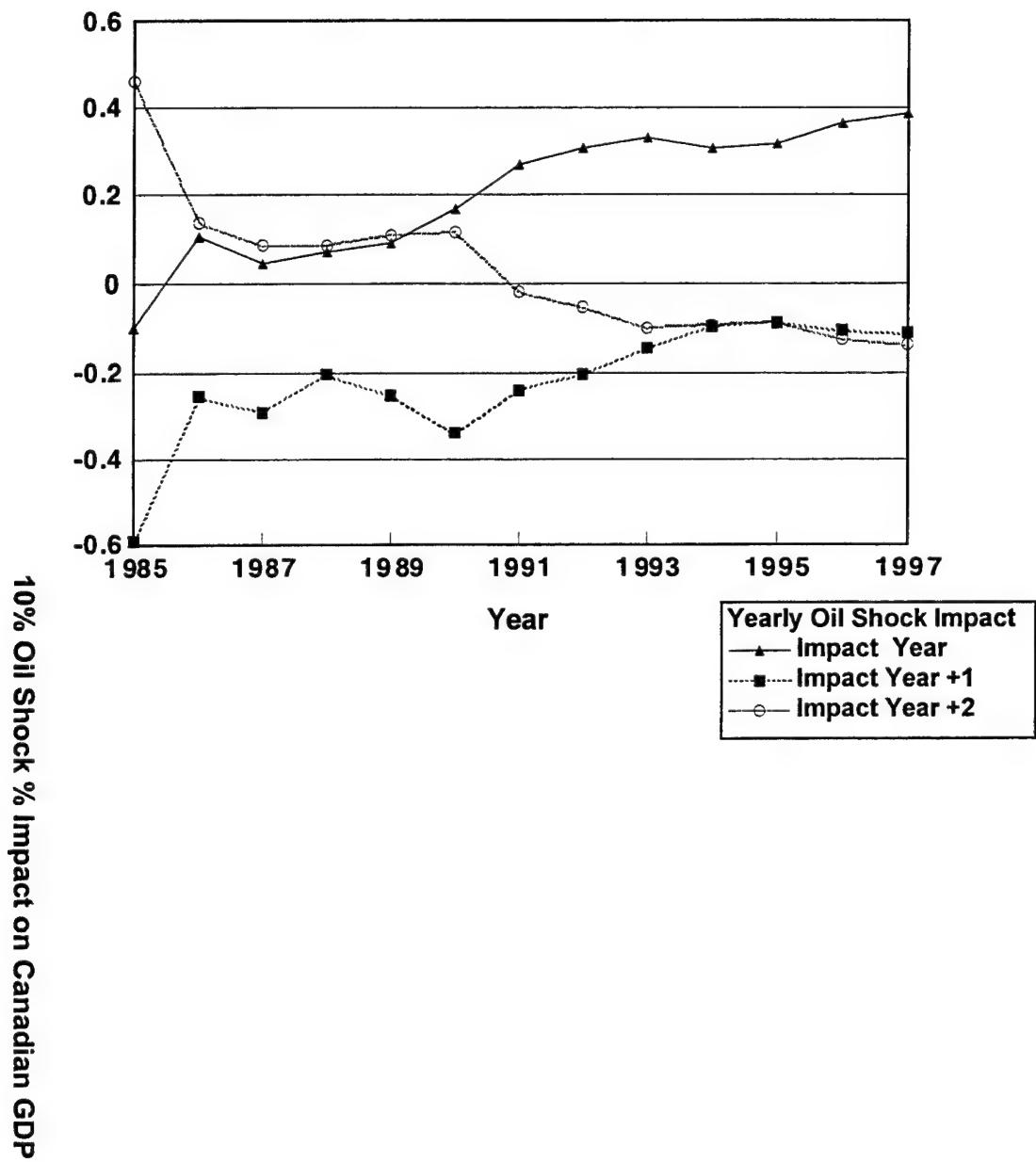
**Summary Oil Shock Impact Analysis: Canada**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	ins	ins	+
Impact Year + 1	+	ins	ins	+
Impact Year +2	+	ins	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	ins	ins	+
Impact Year + 1	+	ins	ins	+
Impact Year +2	+	ins	ins	ins
<b><u>Yearly</u></b>				
Impact Year	+	ins	ins	+
Impact Year + 1	+	ins	ins	ins
Impact Year +2	ins	ins	ins	ins

Notes: Group 1 country. Group 1 data used. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

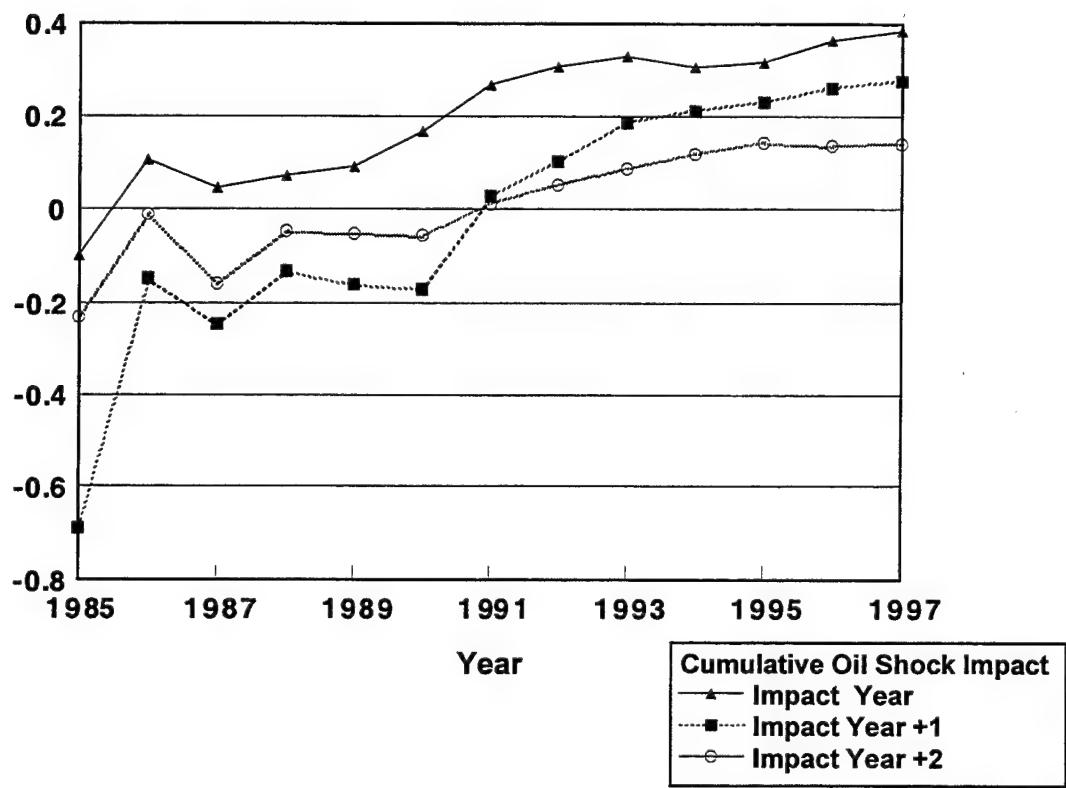
Figure 11

### Yearly Oil Shock Impact: Canada



**Figure 12**

### Cumulative Oil Shock Impact: Canada



10% Oil Shock % Impact on Canadian GDP

## **2.1.4 Finland**

Finland has a fairly free and open Group 1 economy, but still shows some closed economy tendencies, particularly in its fiscal policies. Globalization is an important and rapidly growing aspect of Finland's economic policies; one 1995 study ranks Finland as the fifth most globalized economy in the world, though it lags in the openness category. As with other Group 1 countries, naval forward presence/crisis response will be beneficial to Finland's economic stability.

### ***2.1.4.1 Patterns of Globalization***

Fins generally regard globalization more as an opportunity than a threat. There are many areas in which the country is ranked extremely high in global competition. Finland is generally quite open and well positioned to take advantage of the opportunities afforded by increased globalization.

In 1995 the Freedom House Institute studied the economic freedom of 85 countries.<sup>22</sup> The study quantified the degree of freedom individuals and businesses within each country enjoyed in the following areas: right of ownership; freedom to earning a living (including the freedom to organize in unions); opportunities for setting up businesses; scope for investment; freedom in foreign trade; and the functioning of the market economy (including the rights of minority groups to do business). The Institute divided the countries into four categories: free, partly free, mostly un-free, and un-free.

Finland was placed among the 27 "free" countries, and within that category ranked slightly below average. Finland shared its ranking with Argentina, Austria, Portugal, Switzerland and Poland. Above Finland—i.e., ranked as freer—came Denmark, the Netherlands, New Zealand, Sweden, the United Kingdom, the United States, Austria, Belgium, Canada, the Czech Republic, France, Germany, Ireland, Norway, and Spain. Below Finland in this category—i.e., slightly less free—were Chile, Estonia, Italy, Japan, Latvia, and South Africa.

In a similar 1995 study, the Heritage Foundation ranked Finland 23rd out of a total of 150 countries.<sup>23</sup> In this study, the

criteria for economic freedom comprised the following: trade policy, fiscal policy, public consumption, financial policy, capital flows and foreign investments, banking policies, wage and price policies, right of ownership, regulatory policies, and the black market. The countries were divided into five groups according to each criterion and with the help of that division the complete picture was formed. Finland was ranked at the top for three groups: financial policy, right of ownership and the absence of a black market; while the lowest scores were given to Finland in fiscal policies.

The third study of interest, also carried out in 1995, was done by the Fraser Institute in cooperation with Florida State University, and with the help of a variety of organizations in different countries.<sup>24</sup> According to this study, the concept of economic freedom comprised three primary factors: individual freedom of choice, free exchange, and the protection of private property. 115 countries were analyzed, among which Finland ranked 36<sup>th</sup>.

Finally, the A.T. Kearney/Foreign Policy Magazine Index lists Finland as the fifth most globalized country, behind Singapore, the Netherlands, Sweden, and Switzerland.<sup>25</sup>

In sum, according to these studies, Finland would seem to be a fairly free and open economy, yet incorporating some features of closed and less free economies. These factors are reflected in Finland's changing patterns of globalization over the years. As with many of the other Group 1 countries, the country's general globalization dimension has shown the most dramatic gain (Table 9, Figure 13). Financial flows also increased dramatically in the early 1990s, but these have subsided to their longer term pattern. Much less dramatic has been the slight rise in the openness dimension.

#### **2.1.4.2 Globalization and Oil Price Shocks**

Increases in the general globalization dimension have been a major factor in increasing the severity of external oil price shocks on the Finnish economy. The openness and financial dimensions of globalization, however, also have contributed to this trend over the short run (Table 10). These latter two factors in turn have been somewhat offset by the growth dimension. Based on an examination of the regression coefficients, it is clear that increased globalization in recent years has amplified the negative economic impact on the Finnish economy associated with oil shocks. The net effect has been

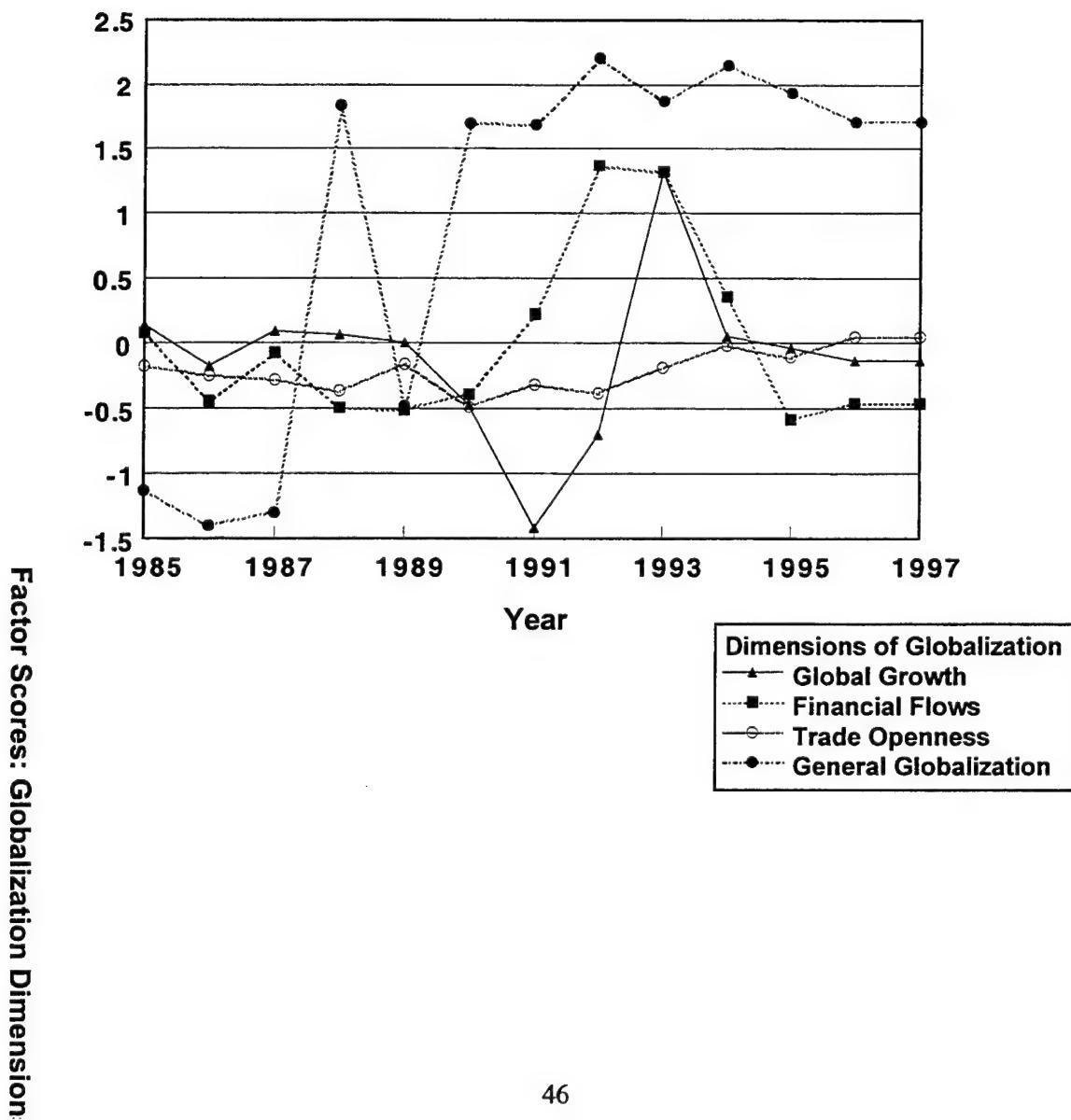
a gradual increase in the share of Finland's GDP adversely affected following an oil shock (Figures 14, 15).

#### 2.1.4.3 *Implications for Naval Forward Presence*

Given the clear patterns of globalization-led oil price sensitivity and the likelihood that Finland's globalization will continue, naval forward presence should have an increasingly positive impact on that country's economy.

Figure 13

### Patterns of Globalization: Finland



**Table 9**  
**Dimensions of Globalization: Finland 1988-1996**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Finland	-0.364	1.841	-0.493	0.064
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Finland	-0.160	1.385	-0.508	0.005
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Finland	-0.487	1.701	-0.394	-0.474
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Finland	-0.317	1.689	0.225	-1.419
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Finland	-0.382	2.209	1.370	-0.702
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Finland	0.188	1.875	1.320	0.104
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Finland	-0.019	2.151	0.359	0.052
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Finland	-0.105	1.940	-0.585	-0.037
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706

<b>1996</b>	<b>Finland</b>	<b>0.048</b>	<b>1.710</b>	<b>-0.463</b>	<b>-0.136</b>
	<b>Group 1</b>	<b>-0.326</b>	<b>1.724</b>	<b>-0.239</b>	<b>-0.106</b>
	<b>Group 2</b>	<b>0.159</b>	<b>-0.034</b>	<b>-0.341</b>	<b>0.140</b>
<b>Average</b>	<b>Finland</b>	<b>-0.178</b>	<b>1.833</b>	<b>0.092</b>	<b>-0.283</b>
	<b>Group 1</b>	<b>-0.153</b>	<b>1.492</b>	<b>-0.089</b>	<b>-0.144</b>
	<b>Group 2</b>	<b>0.146</b>	<b>-0.089</b>	<b>-0.204</b>	<b>0.264</b>

**Table 10**

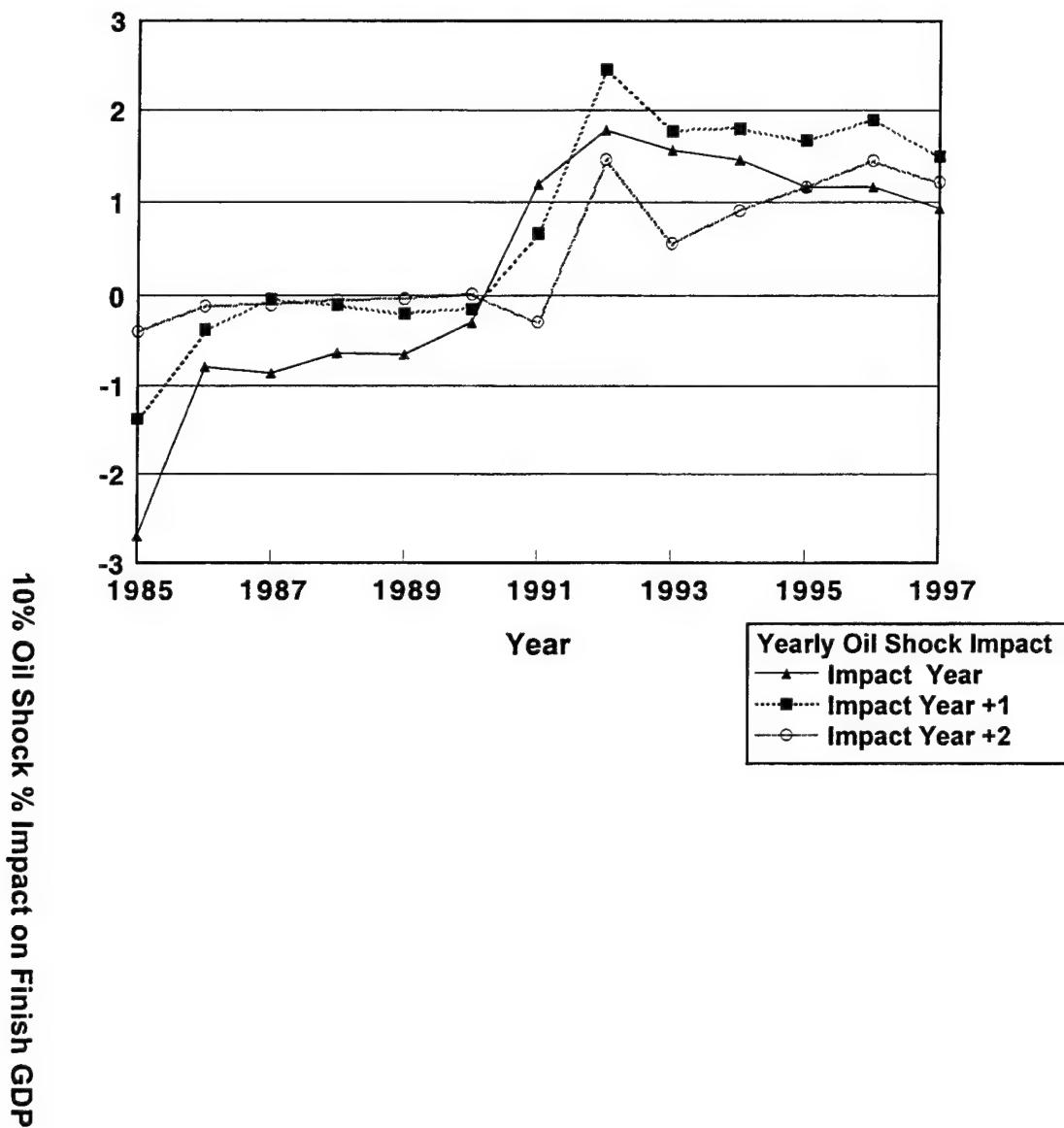
**Summary Oil Shock Impact Analysis: Finland**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	+	+	(-)
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	ins	+	(-)
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b><u>Yearly</u></b>				
Impact Year	+	+	+	(-)
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	+	ins	ins

Notes: Group 1 Country. Finnish data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

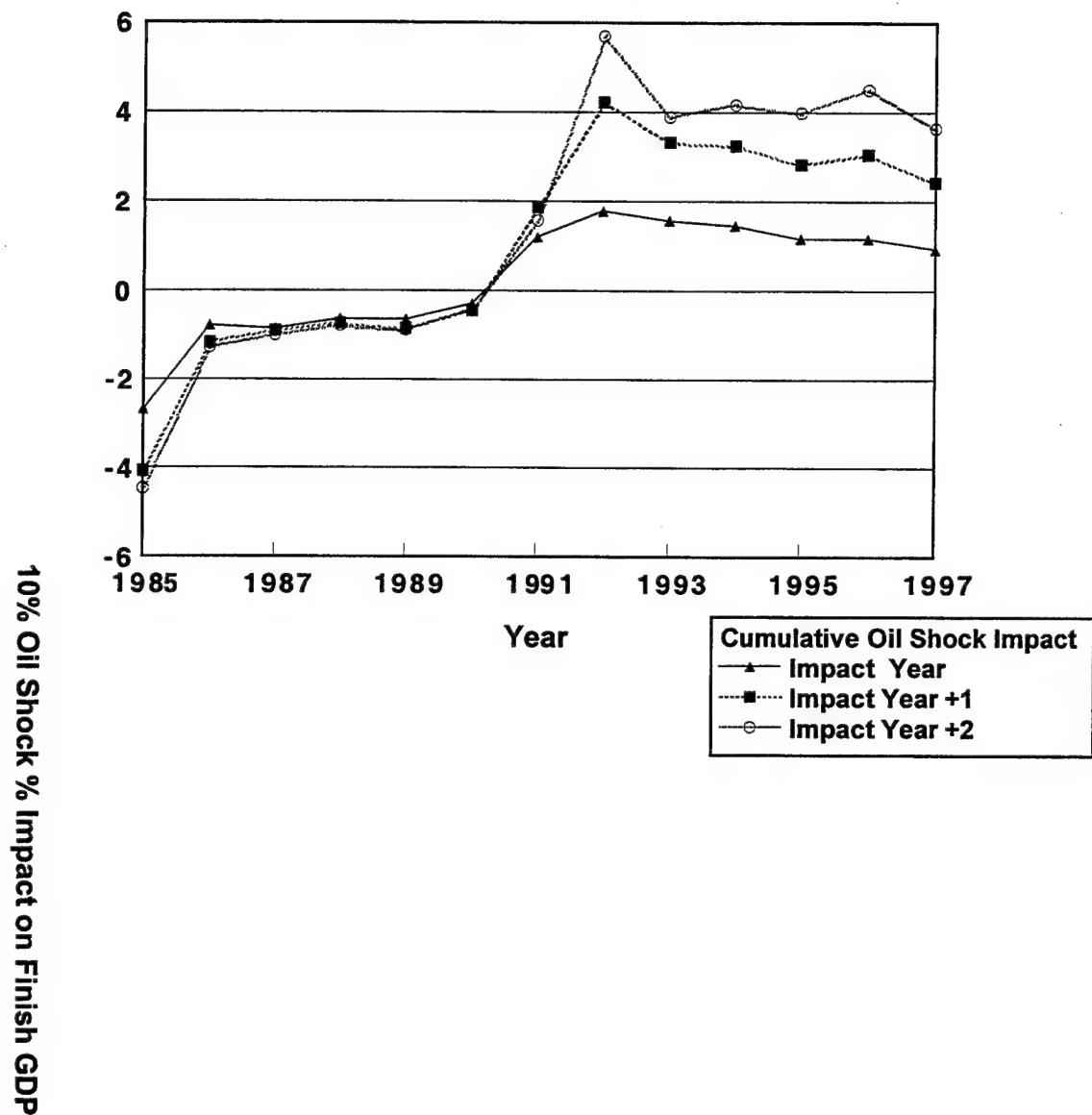
**Figure 14**

### **Yearly Oil Shock Impact: Finland**



**Figure 15**

## Cumulative Oil Shock Impact: Finland



## **2.1.5 France**

France is a Group One country that until recently kept tight government controls on its economy through close coordination with the business and financial sectors, and outright public ownership of key industries. The rapid globalization of world trade in the late 20th century led France to relax these policies, but slowly and cautiously. The result has been a leap in the general globalization dimension of France's economy, while other indicators have remained stable. For this reason, the increasing negative impact on France's economy of oil price shocks results from general globalization alone rather than from an accumulation of factors. France therefore represents a clear case in which the dampening of sudden oil price increases through naval forward presence/crisis stabilization brings obvious benefit.

### ***2.1.5.1 Patterns of Globalization***

After World War II, the French government intervened strongly in the devastated domestic economy to foster long-term economic growth. A powerful elite bureaucracy maintained closed ties between the governmental, industrial, and financial sectors, while French officials nationalized key industries, instituting control through direct state ownership.

As the pace of globalization increased over time, the French government relaxed economic controls. This shift was less an effort by the government at disengagement than a restructuring of regulatory powers in the face of market changes. Edouard Balladur, French finance minister in the late 1980s, extended reforms by abolishing exchange controls and liberalizing interest rates on bonds and long-term deposits. The financial authorities helped banks become more independent by giving them a larger role in securities markets. These reforms were, however, introduced in a carefully calculated manner and maintained a very French style. The country has maintained its national sovereignty by adapting to globalization cautiously and slowly.

Since the late 1980s, French governments have concentrated on the macro-economic business environment, using restrictive monetary policies and tight budgets to bring down inflation. By reducing taxes on industry, officials hoped to promote French competitiveness across the entire economy. The government also significantly diminished potential government control over the

economy by implementing a vast array of deregulatory reforms. Moreover, the authorities have created the “petit bang,” which replaced the monopoly of the 60 official French stockbrokers. This reform allowed the member countries of the EC to trade on the Paris Bourse.

A large jump in the general globalization dimension in the late 1980s (Figure 16) reflects these developments. Other dimensions of globalization appear much more stable, as a result of the country’s cautious and controlled approach toward integration into the global system.

### ***2.1.5.2 Globalization and Oil Price Shocks***

General globalization clearly is the main force determining the strength of the effect oil price shocks have had on France’s economy (Table 12). None of the other globalization dimensions offset the negative impact of such shocks, so the observed increase over time (Figures 17, 18) in lost GDP stemming from rising oil prices is easy to interpret. That is, the loss is not the net outcome of a diverse set of forces pulling in different directions, but instead simply reflects the economic contraction brought about by oil price movements flowing through the domestic economy. Furthermore, the positive sign on the openness dimension (% GDP) for the impact year suggests that as France’s globalization proceeds, oil price shocks are likely to have an increasingly powerful depressing effect on that country’s economy.

### ***2.1.5.3 Implications for Naval Forward Presence***

France represents a clear case in which reduced oil prices stemming from increased naval forward presence would provide significant economic benefits.

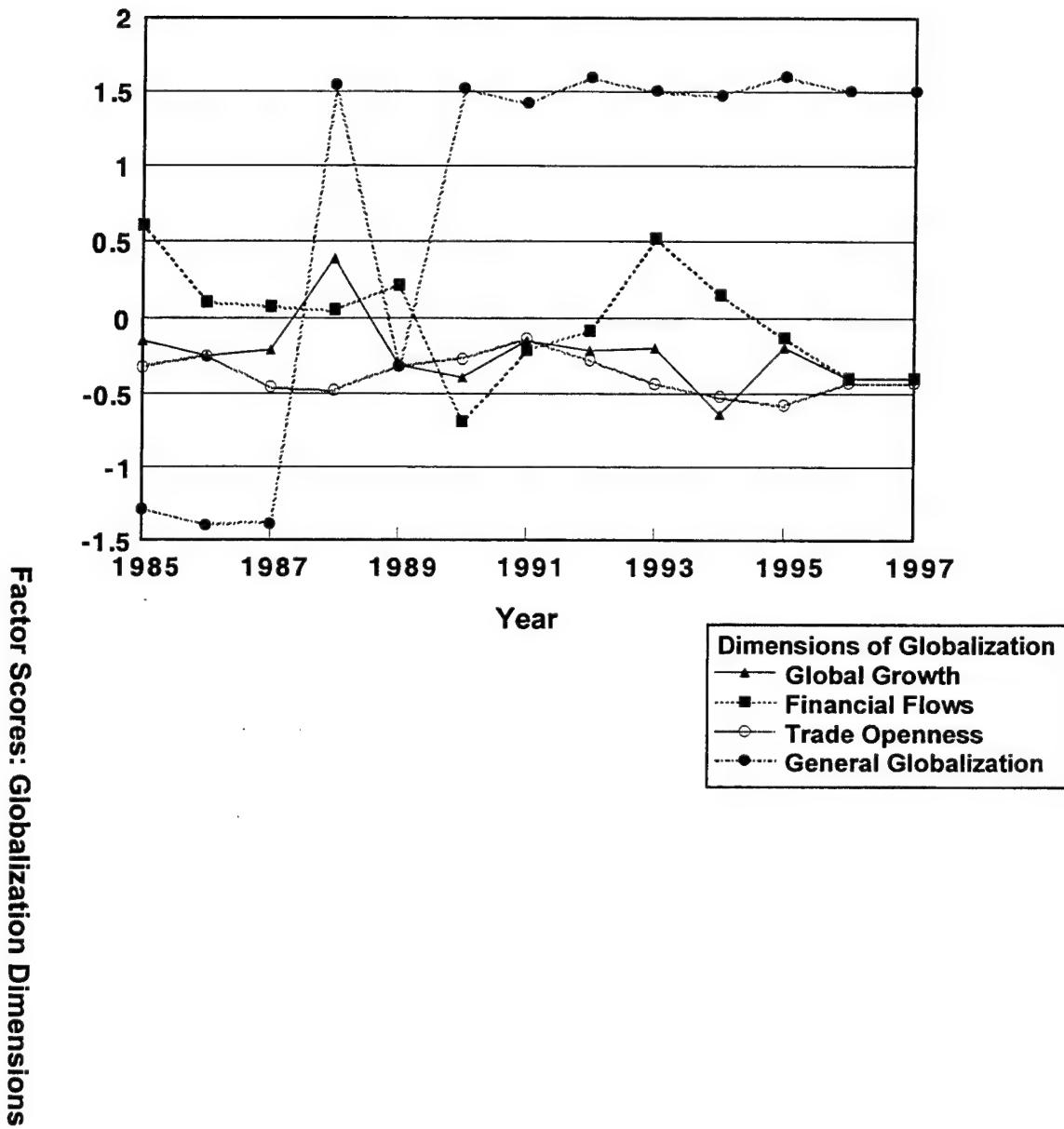
**Table 11****Dimensions of Globalization: France 1988-1996**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	France	-0.282	1.297	-0.239	0.546
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	France	-0.265	0.780	-0.232	-0.120
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	France	-0.255	0.681	-0.929	0.117
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	France	-0.243	1.275	-0.349	-0.215
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	France	-0.144	1.140	-0.561	-0.051
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	France	-0.068	1.200	-0.619	0.412
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	France	-0.516	1.476	0.155	-0.640
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	France	-0.575	1.605	-0.125	-0.194
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706

1996	France	-0.424	1.507	-0.392	-0.401
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
Average	France	-0.308	1.218	-0.366	-0.061
	Group 1	-0.153	1.492	-0.089	-0.144
	Group 2	0.146	-0.089	-0.204	0.264

**Figure 16**

## **Patterns of Globalization: France**



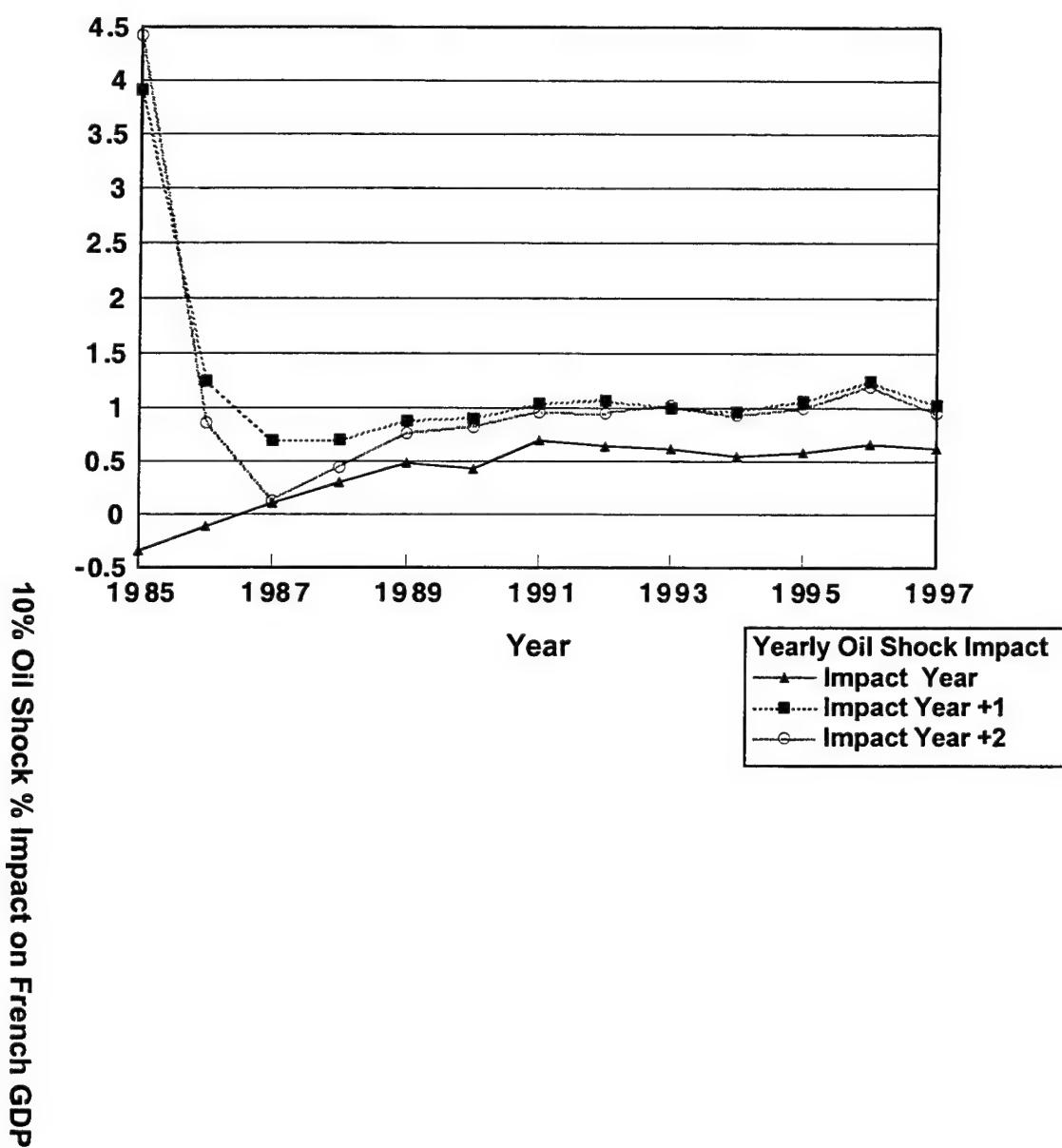
**Table 12**  
**Summary Oil Shock Impact Analysis: France**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	+	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b><u>Yearly</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins

Notes: Group 1 Country. French data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

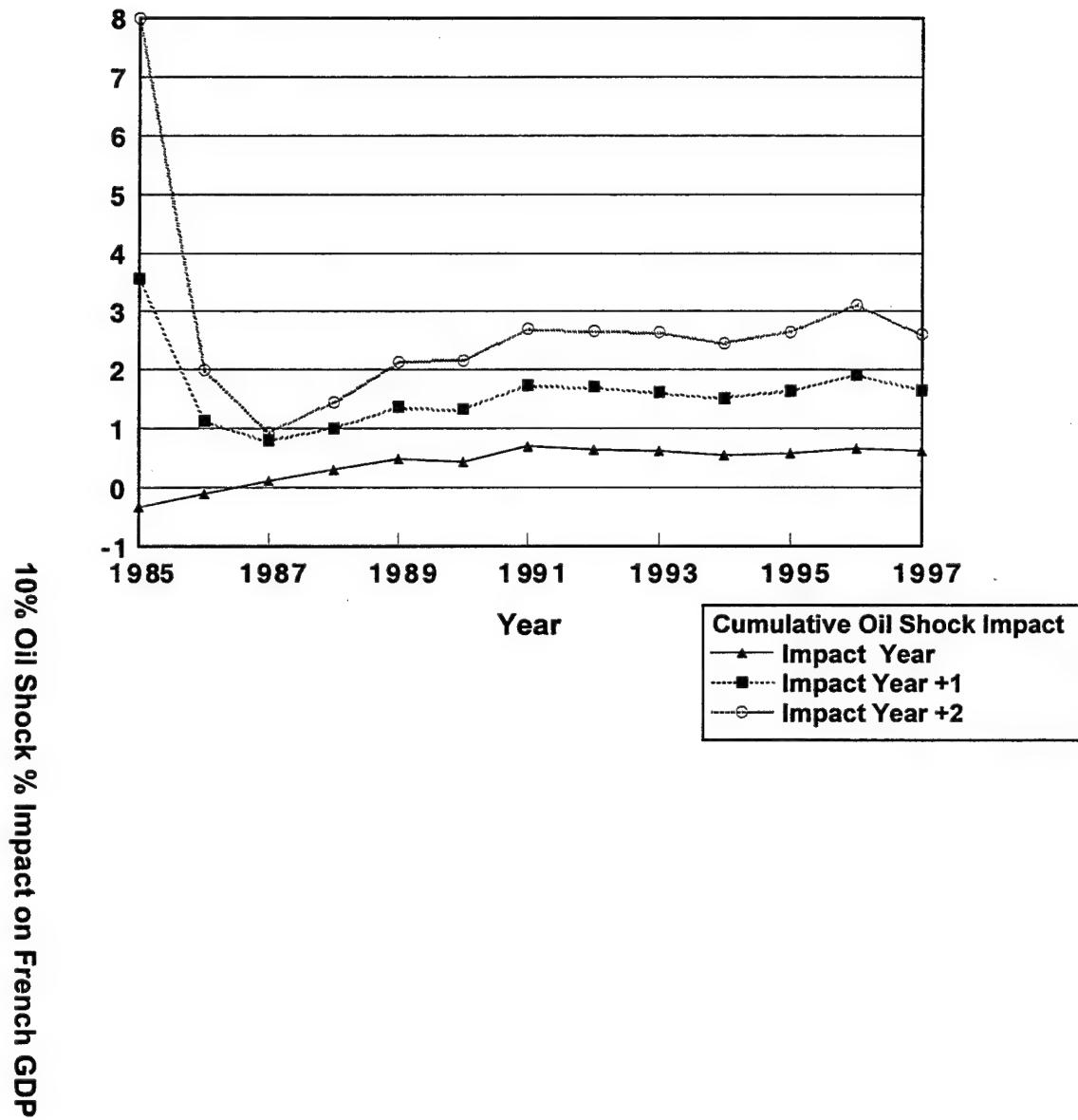
Figure 17

## Yearly Oil Shock Impact: France



**Figure 18**

### Cumulative Oil Shock Impact: France



## **2.1.6 Germany**

Germany's economy has not globalized as quickly as other Western industrialized economies, due primarily to a peculiarly rigid form of government based on strict rules of procedure. Designed to limit the negative impacts of change on society, these rules were successful in keeping the economy stable during the costly process of German reunification in the 1990s. Now, however, this same structural rigidity is preventing Germany from adjusting to the inevitable changes imposed by globalization. Oil price shocks have tended to do noticeable short-term damage to the German economy. As their economy gradually opens up, Germans are likely to feel increasing impacts from sharp increases in oil prices, and therefore will benefit more over time from naval forward presence.

### ***2.1.6.1 Patterns of Globalization***

As with Canada, there is no consistent data available for Germany that can be used to calculate globalization dimensions and patterns over the entire 1985-97 period. Still, with the little data that is available (1992-1997, Figure 19), a number of useful observations can be made concerning that country's progress toward global integration and the challenges that lie ahead.

The factor analysis (Table 13) incorporating data over the 1992-1997 period, suggests that Germany is clearly a Group 1 country. The country is a bit more closed than the norm for Group 1 economies, and has a lower score on the general globalization dimension of globalization. Germany scores somewhat higher than the norm, however, on financial globalization. Finally, German growth in global markets has been somewhat below the norm for endogenous growth countries.

Germany, despite its large economy and productive workforce, has not globalized as rapidly or consistently as might be expected from observing, for example, the United States and Japan. A possible explanation of Germany's lag in globalizing is that the country traditionally has not looked to global economic integration as a source of growth and productivity. Instead, the German economy has relied more on its long-standing strengths, including policies of low inflation, fiscal prudence and a strong currency, all of which are

conducive to investment, growth and employment. The country also has a long tradition of industrial excellence. These elements have enabled the government to absorb the costs of reunification between East and West Germany that began in the early 1990s without igniting inflation. Unfortunately, policies that served the country so well in the past cannot compensate for many of the structural rigidities now confronting officials.<sup>26</sup>

This inflexibility may be difficult to overcome. Helmut Wagner has observed that Germany has a long tradition of strict bureaucratic rules designed to control the pace of change.<sup>27</sup> Countries like the United States or Great Britain are accustomed to making discretionary, flexible adjustments to new situations, whereas in Germany strict procedural rules are used to make the process of change slow and more costly. This practice of limiting bureaucratic flexibility is the main reason it takes much longer in Germany to build up new enterprises, to close them if they fail, and to get new ideas and products into the market.

The main characteristic of globalization is that it imposes permanent new structural changes or paradigm shifts to which societies, governments, enterprises, and individuals must react. Germany's traditional reliance on rule-based economic mechanisms hampers adjustment to these structural shocks. Wagner predicts that the German rule-based system will gradually change.<sup>28</sup> In the meantime, Germany may steadily fall behind those countries whose leaders are able to think and act more flexibly.

#### **2.1.6.2 *Globalization and Oil Price Shocks***

Wagner's interpretation of the globalization process in Germany may explain several of the main patterns found in the analysis (Table 14) of oil price shocks on the German economy. The general globalization dimension is positive, suggesting that increased levels of globalization will be associated with greater declines in GDP following an oil price shock. Increased openness stemming from a reduction in trade barriers has left the country more vulnerable to price movements in the international economy, also tending to increase economic losses associated with increased oil prices. These linkages are reflected in the fact that after 1993 (Figures 20, 21) there has been a tendency for increasingly severe economic downturns associated with the price shocks. It is safe to conclude

that Germany's endemic structural rigidities delay equilibration to shocks, thus imposing a higher short-run cost on the country in the form of unemployment, excess capacity and loss of GDP.

#### ***2.1.6.3 Implications for Naval Forward Presence***

As noted above, Germany is somewhat below the norm in the openness, general globalization, and growth dimensions of its economy, and so has not been highly vulnerable to oil price shocks. As Germany's economy approaches the group norm due to ongoing globalization, it will suffer from greater reductions in GDP due to sharp oil price increases. Naval forward presence is more likely in the foreseeable future to produce larger rather than smaller economic benefits for the German economy.

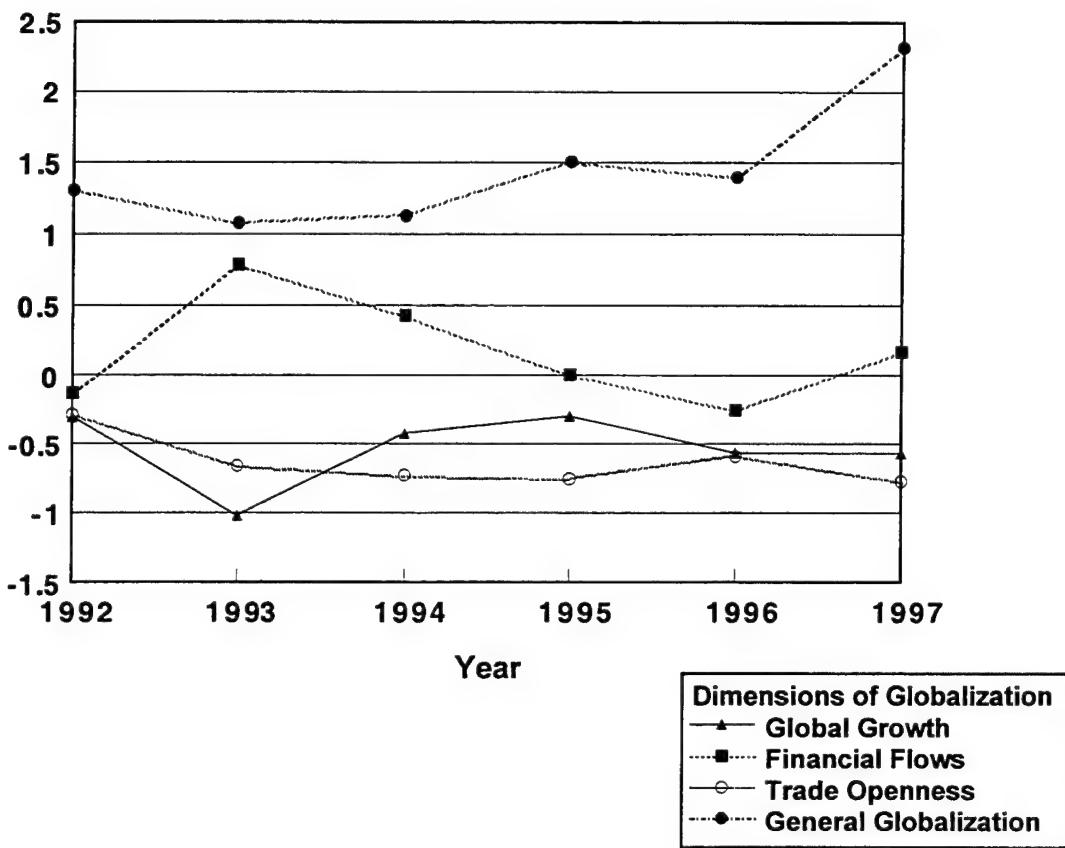
**Table 13**  
**Dimensions of Globalization: Germany 1992-1997**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1992	Germany	-0.286	1.305	-0.130	-0.305
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Germany	-0.660	1.078	0.787	-1.023
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Germany	-0.729	1.127	0.427	-0.426
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Germany	-0.756	1.509	0.008	-0.298
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706
1996	Germany	-0.592	1.399	-0.254	-0.568
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
1997	Germany	-0.774	2.319	0.167	-0.572
	Group 1	-0.694	2.538	0.079	-0.159
	Group 2	0.461	0.028	-0.558	0.100
Average	Germany	-0.633	1.456	0.168	-0.532
1992-1997	Group 1	-0.299	1.721	0.067	-0.191
	Group 2	0.280	0.022	-0.289	0.245

**Figure 19**

## **Patterns of Globalization: Germany**

**Factor Scores: Globalization Dimensions**



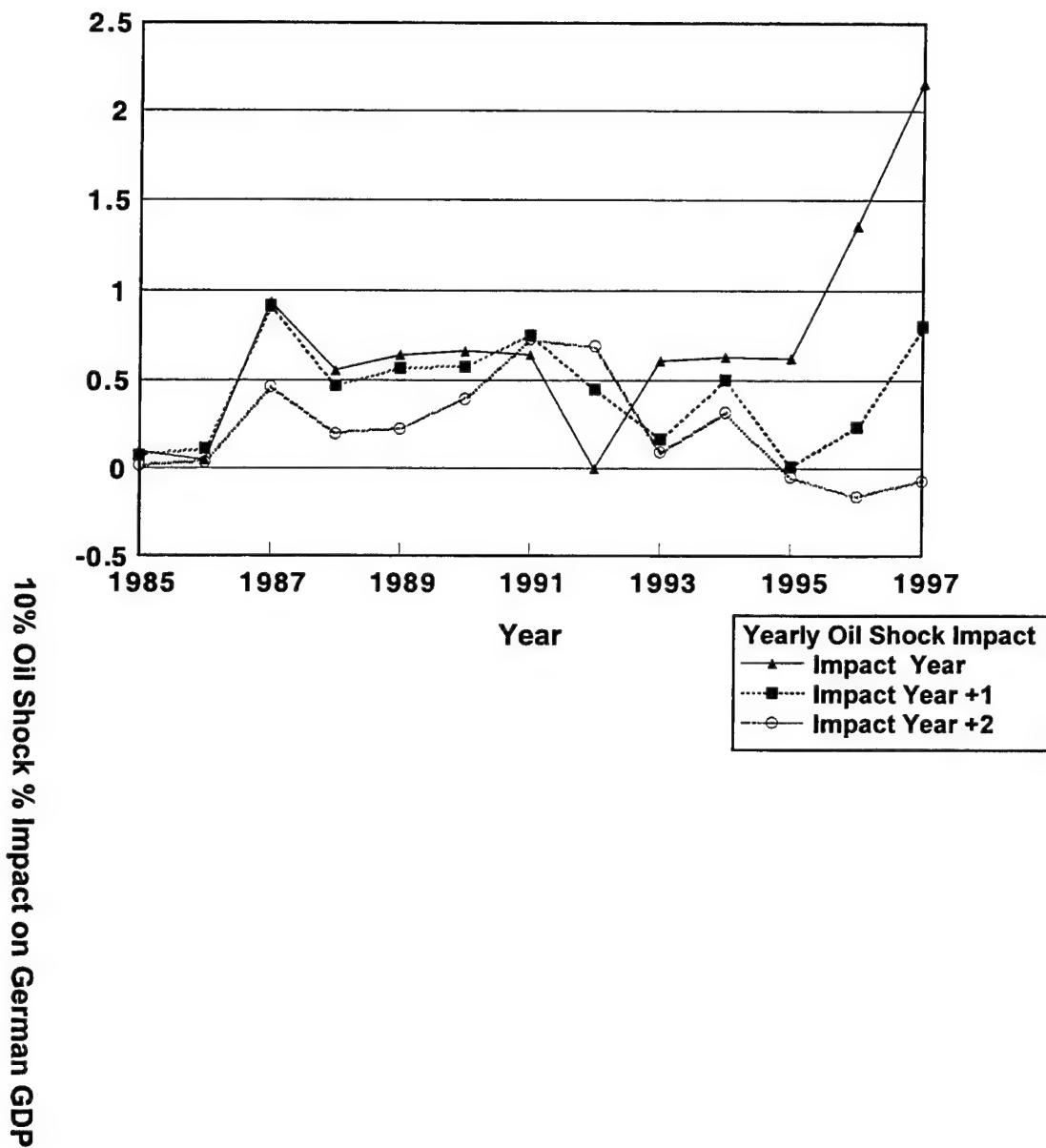
**Table 14**  
**Summary Oil Shock Impact Analysis: Germany**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	ins	ins	+
Impact Year + 1	+	ins	ins	+
Impact Year +2	+	ins	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	+	ins	+
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	+	ins	ins
<b><u>Yearly</u></b>				
Impact Year	+	ins	ins	+
Impact Year + 1	+	+	ins	ins
Impact Year +2	ins	ins	ins	ins

Notes: Group 1 country. Group 1 data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

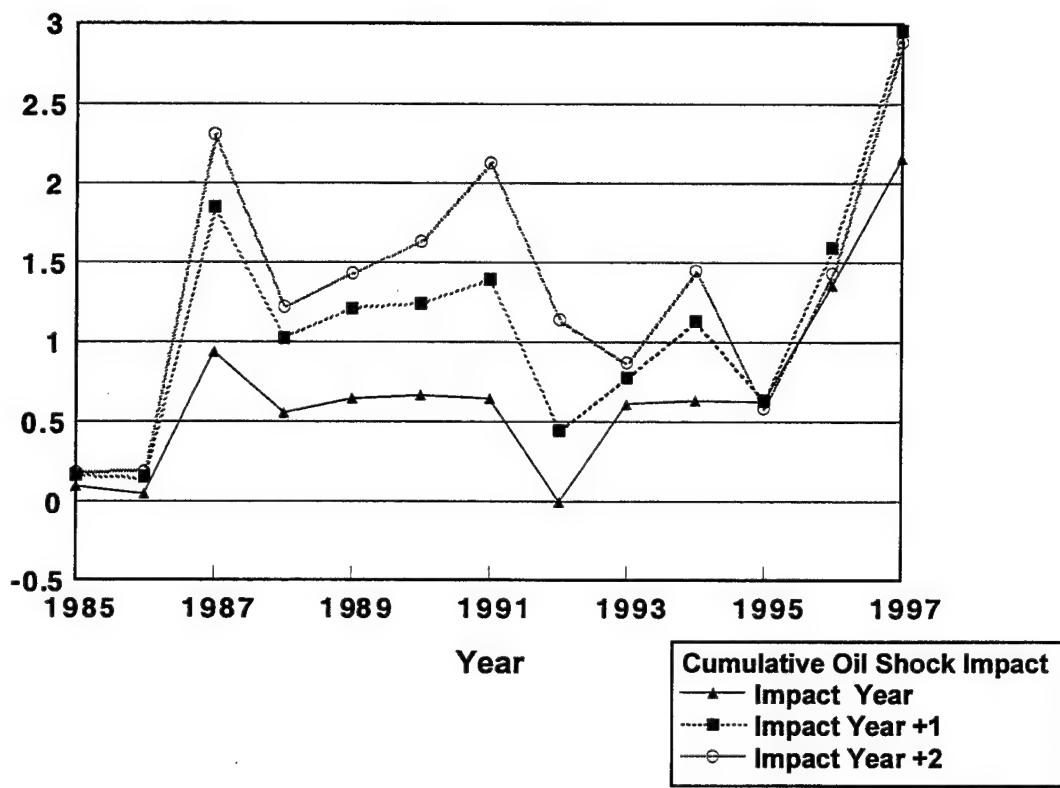
**Figure 20**

### **Yearly Oil Shock Impact: Germany**



**Figure 21**

### Cumulative Oil Shock Impact: Germany



10% Oil Shock % Impact on German GDP

## **2.1.7 Italy**

Financially integrated into the global economy but largely dependent on small to medium-scale manufacturing for its exports, Italy lags behind other Group 1 countries in most dimensions of globalization. Its service sector is limited to tourism and design, both of which are concentrated in the industrialized north of the country. Like France, Italy's vulnerability to oil price shocks lies in the globalization dimension, with no offsetting dimensions to mitigate those effects. Future oil price stability due to naval forward presence would be highly beneficial to Italy.

### ***2.1.7.1 Patterns of Globalization***

Complete data for only two years, 1988 and 1991, were available to calculate the Italian dimensions of globalization. Based on these, the country is a member of the endogenous growth economies (Table 15). Relative to the other Group 1 countries, Italy is less open to trade and has a slightly lower level of general globalization, a higher degree of financial globalization and a higher global growth dimension. The aggregate figures are a bit misleading however, since most of the globalization is confined to the industrial north. The agricultural southern part of the country is much less integrated into the world economy.<sup>29</sup>

In general, Italy's economic structure is comparable to that of most other OECD economies, with a small and diminishing primary sector and services that contribute well over half of gross value added. Apart from tourism and design, however, Italy is not internationally competitive in most service sectors. Its key strength has been in manufacturing, especially small and medium-sized firms specializing in products that require high quality design and engineering. Manufacturing accounts for about 25% of GDP and about 90% of the country's total merchandise exports. The country is a substantial net importer of agricultural products and imports most of its energy.

### **2.1.7.2 Globalization and Oil Price Shocks**

Using the average globalization scores for the Group 1 countries and examining the change over time that oil shocks have had on the Italian economy, (Table 16) it appears that Italy responds to sharp oil price increases in a manner similar to France. Italy's general globalization dimension is the only statistically significant determinant of the size of GDP loss associated with an oil price shock. The magnitude of this loss has remained fairly stable throughout the 1990s (Figures 23, 24).

### **2.1.7.3 Implications for Naval Forward Presence**

Italy's economy has no dimensions of globalization that would tend to reduce the future severity of oil price shocks. In this case, reduced oil prices stemming from increased naval forward presence and crisis stabilization would provide clear economic benefits.

**Table 15**

<b>Dimensions of Globalization: Italy 1988-1996</b>					
Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Italy	-0.601	1.043	0.640	0.458
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1991	Italy	-0.560	1.362	-0.014	-0.185
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
Average	Italy	-0.581	1.203	0.313	0.137
	Group 1	-0.128	1.295	-0.141	-0.046
	Group 2	0.091	-0.065	0.018	0.411

**Table 16**

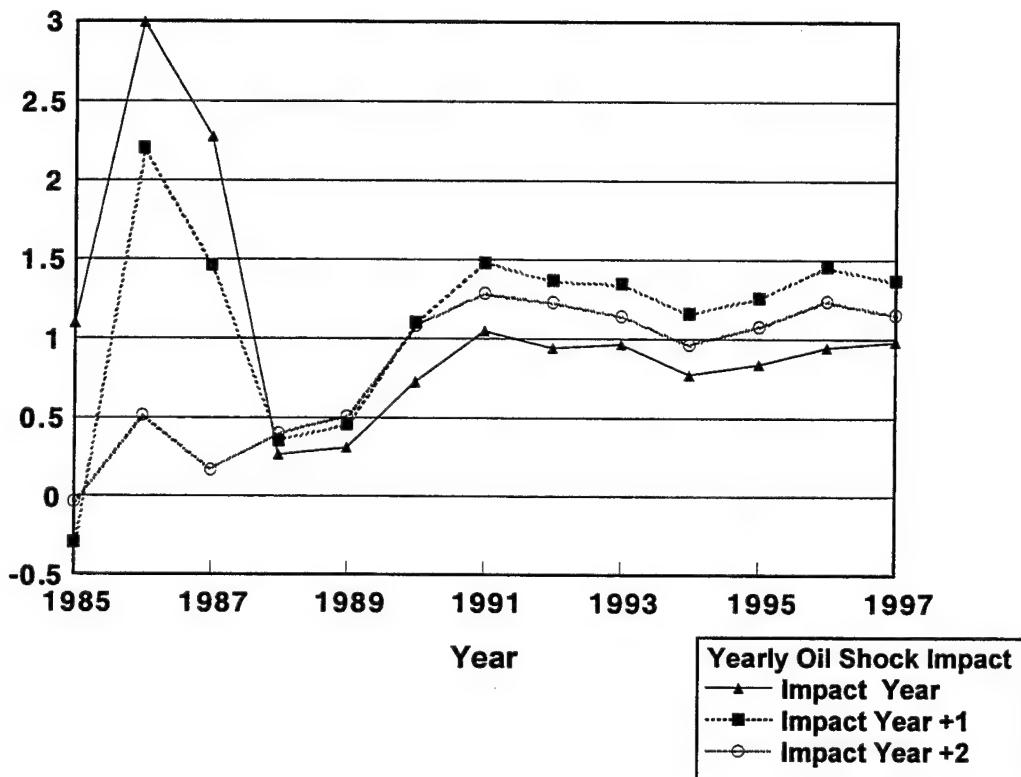
**Summary Oil Shock Impact Analysis: Italy**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b>Cumulative</b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b>Cumulative % GDP</b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b>Yearly</b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins

Notes: Group 1 Country. Group 1 data used in the analysis.  
 Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

**Figure 23**

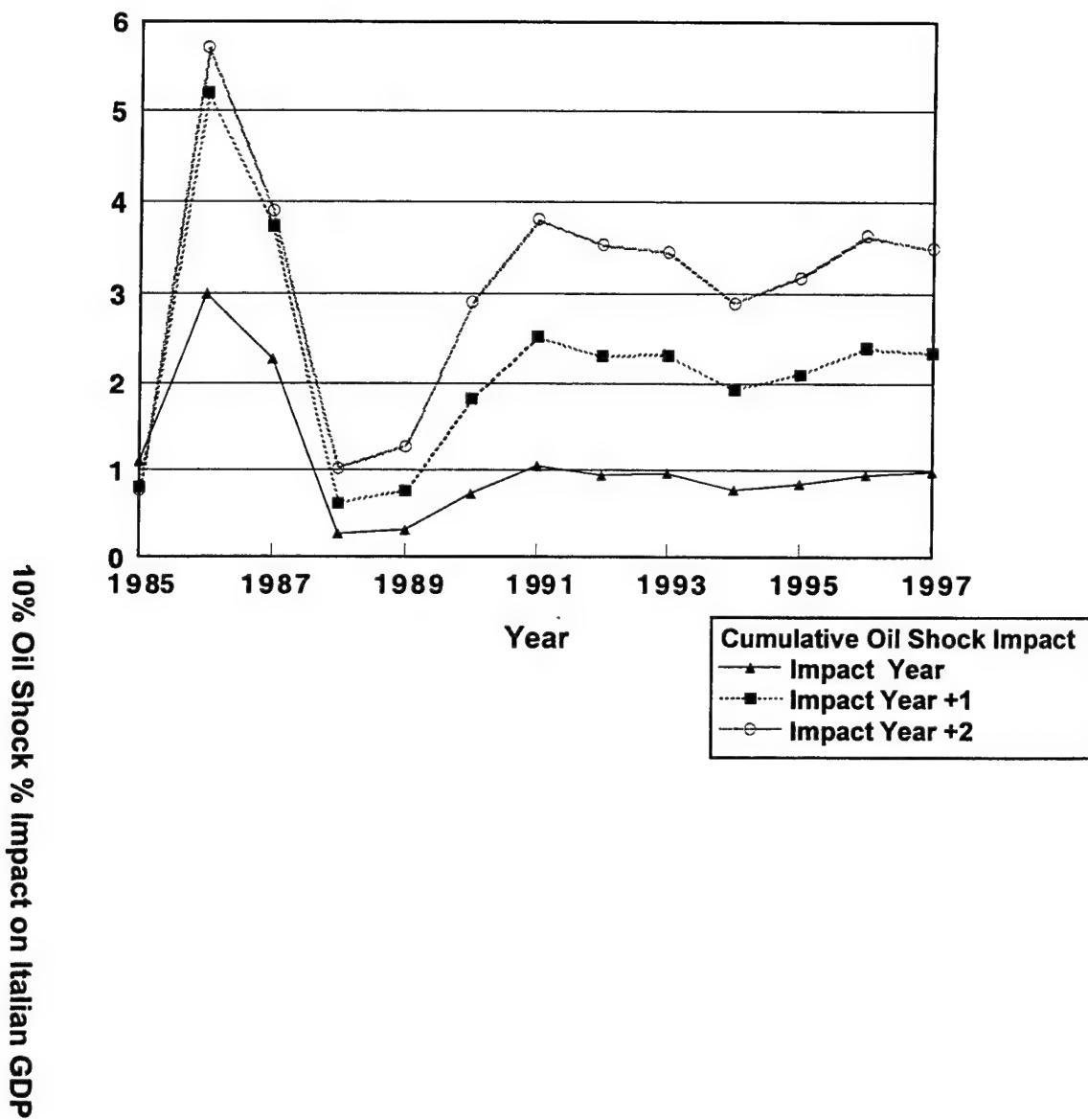
### **Yearly Oil Shock Impact: Italy**



10% Oil Shock % Impact on Italian GDP

Figure 23

### Cumulative Oil Shock Impact: Italy



## **2.1.8 Japan**

Although Japan was the first Asian country to open to foreign trade, more than one hundred years ago, its modern leaders have approached globalization cautiously by maintaining strong protection mechanisms for certain domestic sectors. This has created a large disparity in Japan's balance of payments, and left the Japanese economy extremely vulnerable to oil price shocks. In the absence of offsetting globalization dimensions to reduce their impact, sharp oil price increases will continue to inflict heavy damage on the Japanese economy. Naval forward presence will bring only minor benefits until Japan makes the structural changes necessary to bring its economy in line with those of other Group 1 countries.

### ***2.1.8.1 Patterns of Globalization***

A complete set of data was not available on the Japanese economy for the purpose of estimating long run trends in the economy's main dimensions of globalization. This analysis is based on data from three years, 1991-93. These are enough to provide a rough picture of how Japan's main dimensions of globalization compare with those of the other major economies comprising Group 1. In particular, Japan: (1) is much less open to trade; (2) has a higher degree of general globalization; (3) is slightly less integrated financially; and (4) has a considerably higher rate of growth and trade in the global economy (Table 17). Oil shock impact patterns produced using Group 1 figures for Japan are depicted in Figure 27.

Japan was the first Asian society to open itself to globalization, in the nineteenth century, and to adapt successfully to the rest of the world.<sup>30</sup> As was the case with France, Japan has preserved its national sovereignty by adapting to the globalization phenomenon cautiously and slowly.<sup>31</sup> Unlike France and other Group 1 countries, however, great disparities have developed in many of Japan's major balance of payment categories. For example, from 1950 to the end of the 1990s, more than \$350 billion of Japanese investment went abroad, but foreign investment in Japan remains equivalent to less than 10 percent of that amount.

Japan has a relatively low degree of openness to foreign trade. As a percentage of GDP, Japan's two-way foreign trade in 2000 was just 16.8%, compared with 54.9% for Germany and 20.1% for the United States. The closed nature of Japan's economy also stands out when compared with other Asian economies such as China's, which in the year 2000 saw foreign trade reach 43.2% of GDP. This disparity is largely owing to Japan's official and unofficial restrictions on merchandise imports, which remain in place despite pressure from the United States and other important trading partners to eliminate them. These restrictions are intended to protect the less efficient sectors of Japan's industry, such as textiles, food and pulp and paper. Japan's low degree of openness to foreign trade has often been cited as one reason for the persistent structural problems in its economy in general, and the poor productivity of companies in the non-tradable sectors in particular.

At this point, the literature on Japanese globalization goes in two different and diametrically opposed directions. One view holds that Japan's economic problems stem from its slow response to globalization.<sup>32</sup> The other view contends that Japan's current problems stem from the country's failure to adjust to an overhang of excess capacity and surplus employees arising from deregulation, structural changes, and the globalization of the economy in the 1990s.<sup>33</sup> According to this view, excess capacity and surplus staff on the supply side of the economy are acting as a drag on employment and wages, as well as on new investment in plant and equipment, contributing further to Japan's long economic downturn and falling prices.

#### **2.1.8.2 Globalization and Oil Price Shocks**

While a full analysis is beyond the scope of this study, a brief look at oil price shocks should shed some light on the role of globalization in Japan's recent economic performance. Several patterns emerge (Table 18):

1. Increases in general globalization have increased the severity of oil price shocks on Japan's economy. This is the dominant relationship produced by a regression of the main dimensions of globalization on a year-to-year simulation of a 10 percent oil price shock.

2. The effect of increased general globalization on the costs associated with oil price shocks has been offset a bit by an increase in the financial dimension of globalization, although this appears to affect the severity of the shock over only one or sometimes two years.
3. There has been a general increase in the severity of oil price shocks over time—particularly since the mid-1990s (Figures 24 and 25).

These results suggest that Japan's slow response to the changes imposed by globalization is the most likely cause of its stumbling economy. Because the country has lagged in adjusting to globalization, especially in the area of trade, the cost structure of the economy may be rising relative to its main trading partners. When hit with increased oil prices, firms that face weak domestic competition have little trouble raising their prices to pass the increased costs along to the buyer.

#### **2.1.8.3 Implications for Naval Forward Presence**

Given the increased costs to Japan's economy in recent years associated with oil price increases, naval forward presence should produce greater benefits with time. These benefits may be reduced somewhat if the country is able to push ahead with major financial reforms that bring it more in line with other Group 1 countries on the financial dimension of globalization. In light of Japan's existing impediments to trade, major progress in trade liberalization would reduce the severity of oil price shocks by introducing more flexibility into the economic system. This would be a significant change for Japan. Japanese leaders' cautious approach to globalization so far suggests these reforms are still years away, and that oil price shocks will continue to exact a high toll on the domestic economy, with naval actions from time to time reducing these costs.

**Table 17**  
**Dimensions of Globalization: Japan 1991-1993**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1991	Japan	-1.220	1.828	-0.268	0.191
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Japan	-1.363	1.535	0.005	0.246
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Japan	-1.472	1.184	-0.017	-0.291
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
Average	Japan	-1.352	1.516	-0.093	0.049
	Group 1	-0.129	1.442	0.047	-0.220
	Group 2	0.236	0.102	-0.117	0.171

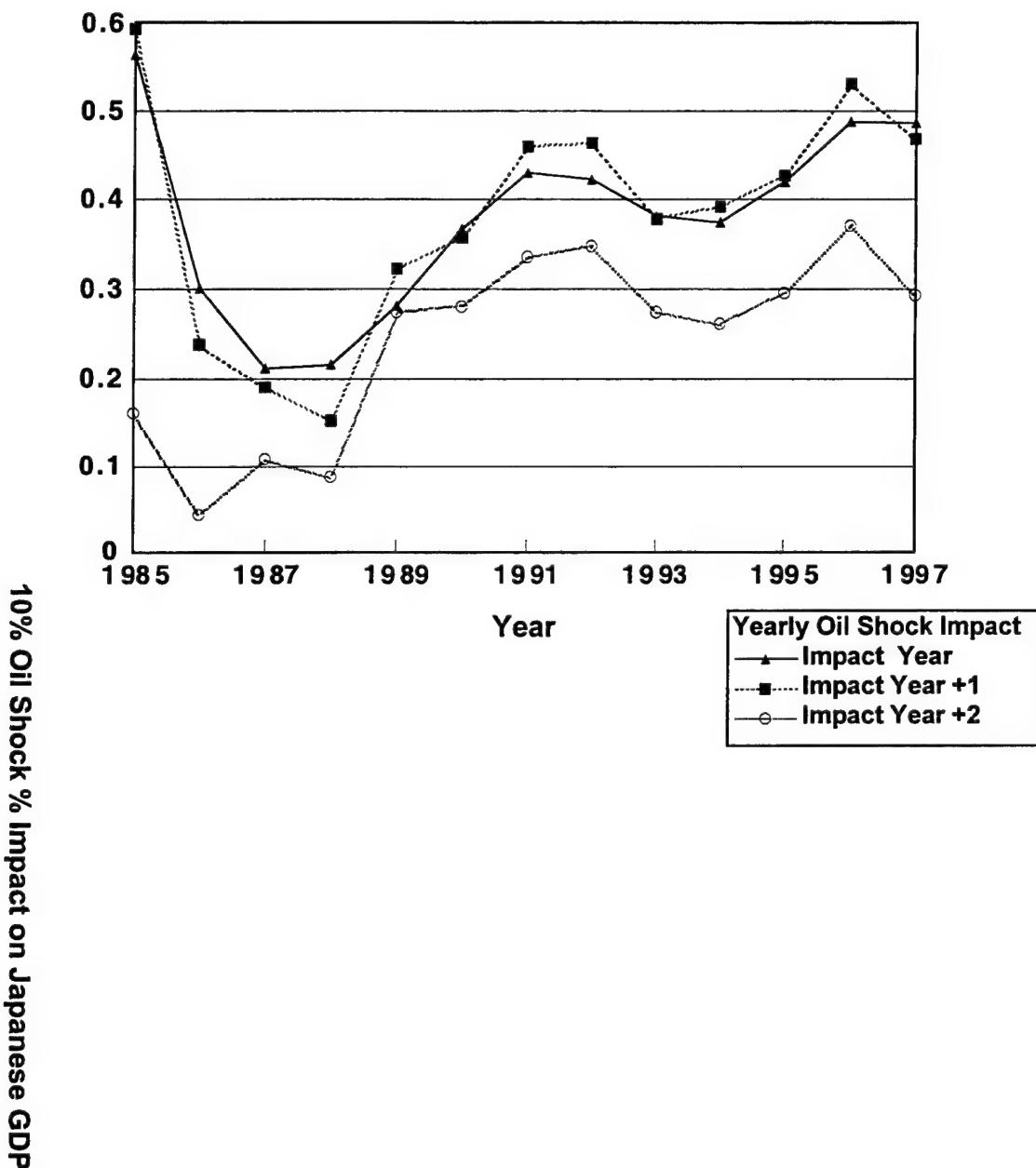
**Table 18**  
**Summary Oil Shock Impact Analysis: Japan**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	ins	(-)	ins
Impact Year + 1	+	ins	(-)	ins
Impact Year +2	+	ins	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	ins	(-)	ins
Impact Year + 1	+	ins	(-)	ins
Impact Year +2	+	ins	ins	ins
<b><u>Yearly</u></b>				
Impact Year	+	ins	(-)	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins

Notes: Group 1 country. Group 1 data used. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

Figure 24

### Yearly Oil Shock Impact: Japan



## Cumulative Oil Shock Impact: Japan

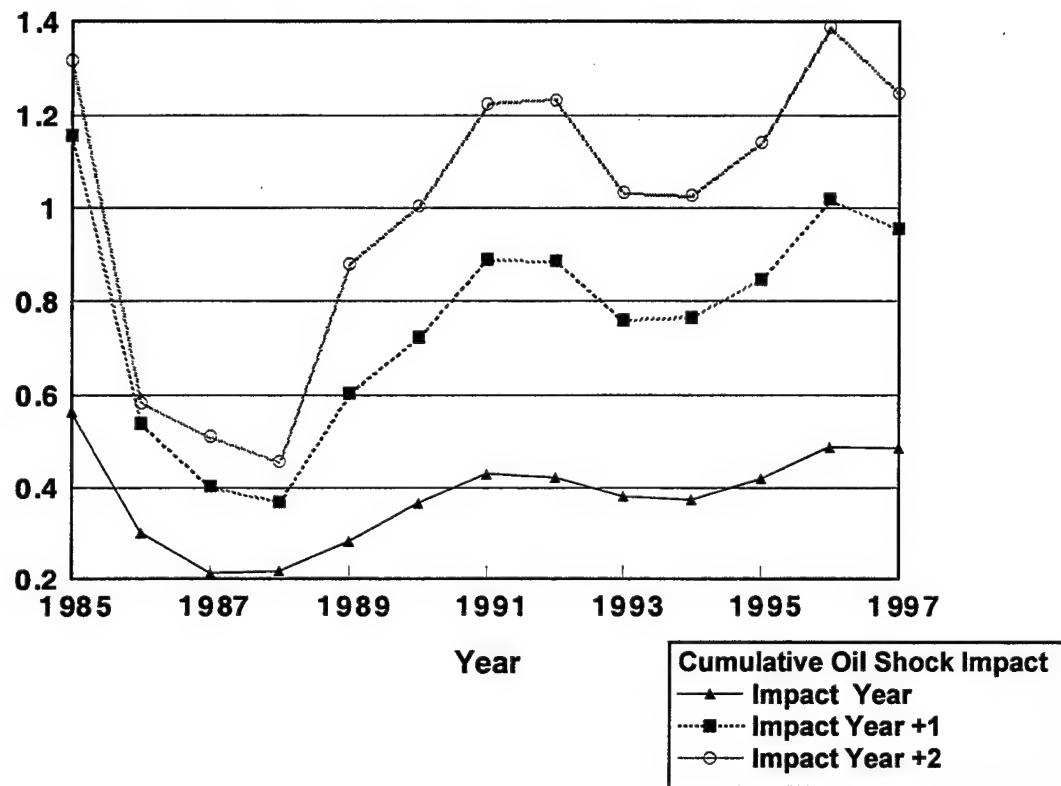


Figure 25

10% Oil Shock % Impact on Japanese GDP

## 2.1.9 The Netherlands

The Netherlands, an age-old seafaring nation located at the cusp of Europe's western transport network, has a small Group 1 economy based on processing and manufacturing. These industries rely on almost entirely on international trade to acquire raw materials and sell finished goods, leading the Netherlands to develop one of the most open economies in the world. Despite its size, it is the sixth largest recipient of foreign direct investment thanks to generous tax policies and incentives. High indices of globalization mean that Holland is particularly vulnerable to oil price shocks, which have inflicted significant losses in GDP on its economy. This experience appears to be typical of small globalized economies, which lack the domestic economic depth to absorb such shocks. Price stabilization through naval forward presence therefore is bound to be of benefit to the Netherlands, and by extension, to other small economies.

### 2.1.9.1 *Patterns of Globalization*

Holland's geographical position as a crucial hub of Europe's transport system, combined with the small size of its domestic market, have made the Dutch economy one of the most open and outward-looking in the world. A scarcity of natural resources and raw materials have turned Holland's economy toward manufacturing and processing. With exports and imports of goods and services together totaling more than 100% of nominal GDP, the Netherlands ranked second (after Singapore) on the A.T. Kearney globalization index.

Trade is especially critical for the manufacturing sector, which is almost entirely dependent on imported materials. Prominent Dutch multinationals include Royal Dutch/Shell (oil), Unilever (food), Philips (electronics), and Heineken (brewing). Holland's open economy also attracts foreign companies. Favorable tax treatment for multinationals has put the Netherlands ahead of Ireland and the United Kingdom, in attracting foreign direct investment (FDI). There are approximately 5,000 foreign-owned companies in the Netherlands, employing 10% of the Dutch workforce. The Netherlands ranked fourth in the World Competitiveness Yearbook 1998, coming from sixth place in 1997, a result of its long-standing favorable trading policies.

Financial flows and foreign direct investment (FDA) in particular are as important as trade to Holland's economic well being. Most economists now accept the fact that FDI is far more than mere "capital." It is a uniquely potent bundle of capital, contracts, and managerial and technological knowledge. It is regarded as the cutting edge of globalization.<sup>34</sup> Over the period 2001-2005, the Netherlands is expected to attract \$36.1 billion in FDI, making it the sixth largest recipient after the United States, Britain, Germany, China, and France.

While data is not complete over the entire 1985-97 period, several differences between the Netherlands and other Group 1 countries emerge (Table 19). The Dutch economy is much more open than those of other Group 1 countries, with its generalization dimension also considerably above the norm for the group. By contrast, its financial dimension is slightly below the Group 1 norm, as was its growth in the global economy. In the years 1992-1995, the Dutch economy showed a sharp drop in the openness dimension and an equally dramatic increase in the general globalization dimension (Figure 26). There was a slight upward trend in the financial dimension during the first part of the 1990s.

### ***2.1.9.2 Globalization and Oil Price Shocks***

Analysis of the impact of Holland's changing globalization on the magnitude of oil price shocks found a clear pattern (Table 20). As expected, general globalization, openness, financial globalization and global growth all have exacerbated income reduction following an increase in the price of oil; a plus sign for the financial dimension (greater loss in GDP associated with increases in this dimension) in the impact year and a negative sign for the impact +1 year is more difficult to interpret. The general globalization dimension seems to be the dominant factor here, with the global growth dimension also present across all measures and time periods of the oil price-induced loss in GDP.

The impact of oil price increases on Holland's GDP appears to have grown considerably over the period under study (1985-97). This was particularly true during 1987-1991 (Figures 27, 28). After a slight drop in 1992, the subsequent trend again was of gradual increases in GDP loss.

Whether the experience of the Netherlands (increases in most dimensions of globalization causing greater income losses from oil price shocks) is typical of small national economies is debatable. A recent study of the Netherlands' globalization experience by Annelies Hogenbrik and Rajneesh Narula concludes that small countries are affected by economic globalization to a greater extent than larger economies, and that, in general, the small countries have taken a pragmatic view of this fact.<sup>35</sup> Hogenbrik and Globali conclude, however, that it is even more crucial for small countries to invest in improving their competitiveness, since their activities are concentrated in relatively few sectors.<sup>36</sup> This means they have less leeway in delaying the termination of sunset industries, or in the adoption of new technologies and the upgrading of assets to enter new and emerging sectors.

Small economies also are more susceptible to errors of judgment: if a small country selects the "wrong" sector to develop and build up competencies in, or under-invests in those industries so that they are unable to compete effectively on world markets, there is no home market to soften the shock. At the same time, small countries such as the Netherlands are beleaguered by increased competition for FDI in a globalizing world; the need to maintain and upgrade their location advantages in response to changing economic realities is central to their survival.

#### ***2.1.9.3 Implications for Naval Forward Presence***

Income losses due to oil price shocks appear to be increasing in the Netherlands. This pattern is associated with increases in globalization, leading to the assumption that if globalization continues, Holland will suffer greater declines in GDP stemming from increased oil prices. This is a case in which naval forward presence should provide obvious benefits to the national economy. The Netherlands experience may be typical of smaller economies in general, though how far this assumption should taken is debatable. The case of the Netherlands nevertheless suggests that a large group of smaller economies might benefit significantly from naval forward presence.

**Table 19**

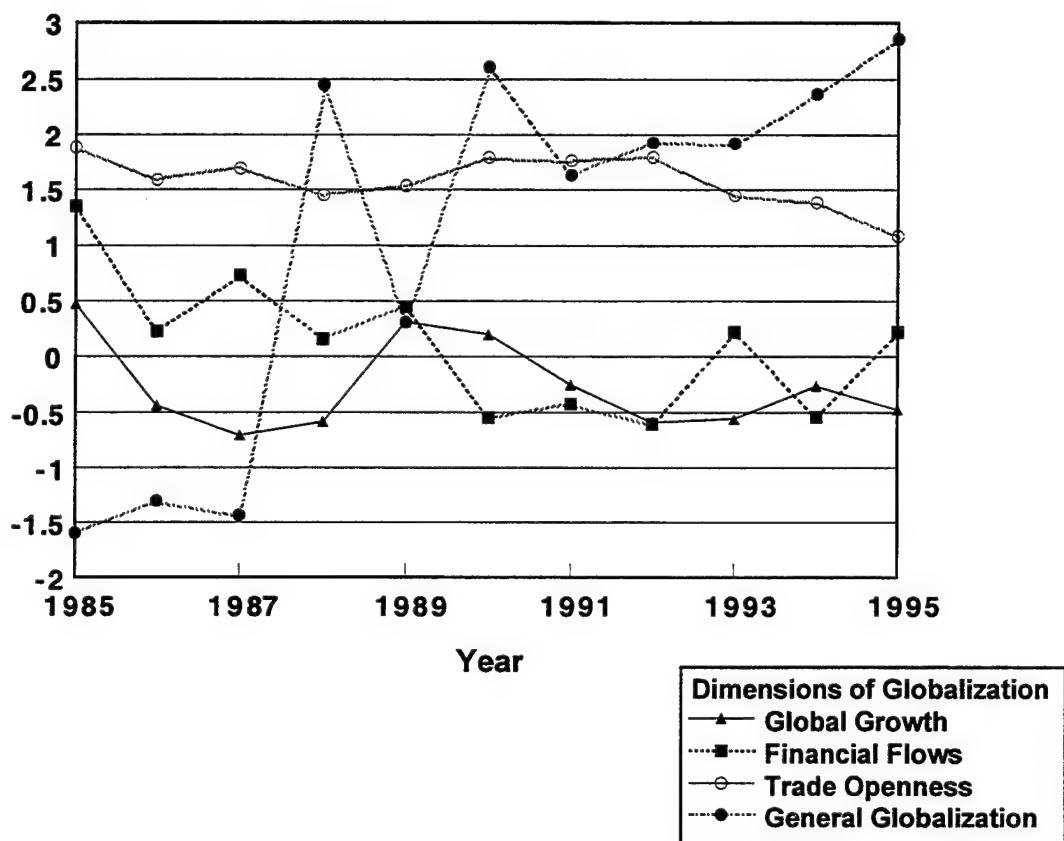
<b>Dimensions of Globalization: Netherlands 1988-1996</b>					
<b>Year</b>		<b>Structural Openness</b>	<b>General Globalization</b>	<b>Financial Globalization</b>	<b>Global Growth</b>
1988	Holland	1.453	2.453	0.157	-0.587
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Holland	1.536	3.011	0.446	-0.175
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Holland	1.796	2.609	-0.550	0.195
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Holland	1.767	1.636	-0.425	-0.254
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Holland	1.797	1.929	-0.606	-0.593
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Holland	1.451	1.925	0.220	-0.560
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Holland	1.388	2.379	-0.543	-0.268
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Holland	1.085	2.861	0.221	-0.476
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706

Average	Holland	1.534	2.350	-0.135	-0.340
	Group 1	-0.131	1.463	-0.070	-0.148
	Group 2	0.145	-0.096	-0.187	0.280

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**Figure 26**

### **Patterns of Globalization: Netherlands**



**Factor Scores: Globalization Dimensions**

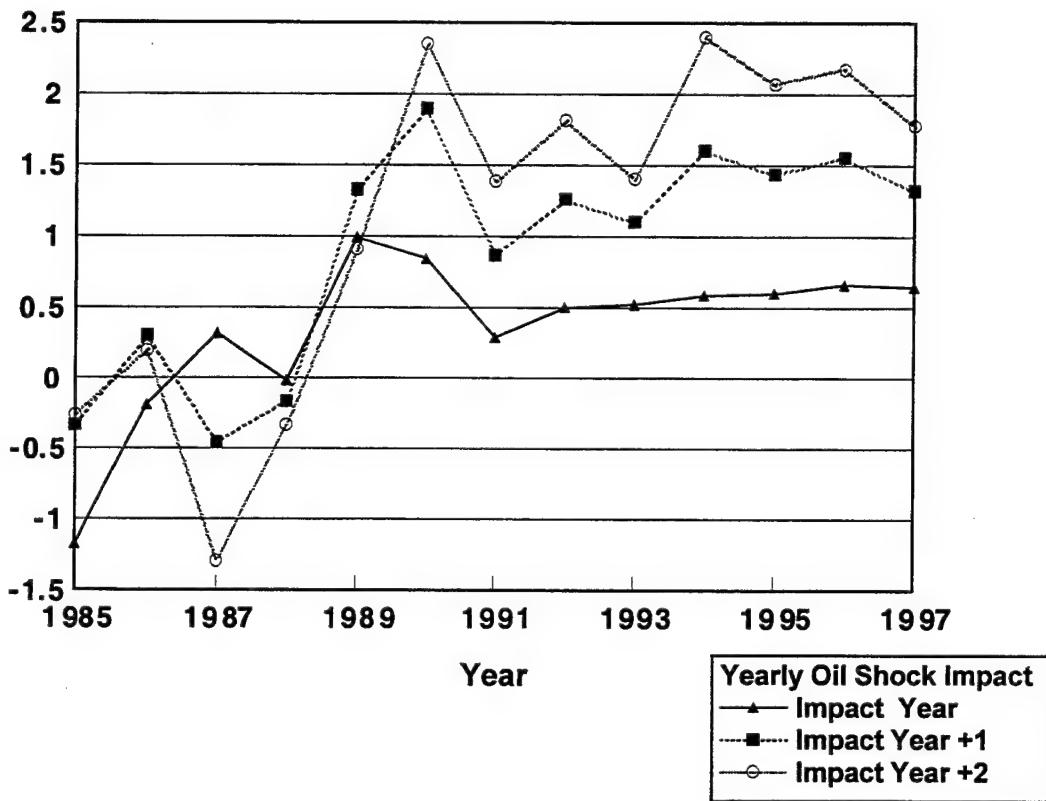
**Table 20**  
**Summary Oil Shock Impact Analysis: Netherlands**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	+	+	+
Impact Year + 1	+	ins	ins	+
Impact Year +2	+	ins	(-)	+
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	+	+	+
Impact Year + 1	+	+	ins	+
Impact Year +2	+	+	(-)	+
<b><u>Yearly</u></b>				
Impact Year	+	+	+	+
Impact Year + 1	+	ins	ins	+
Impact Year +2	+	ins	(-)	ins

Notes: Group 1 country. Netherlands data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

**Figure 27**

## **Yearly Oil Shock Impact: Netherlands**

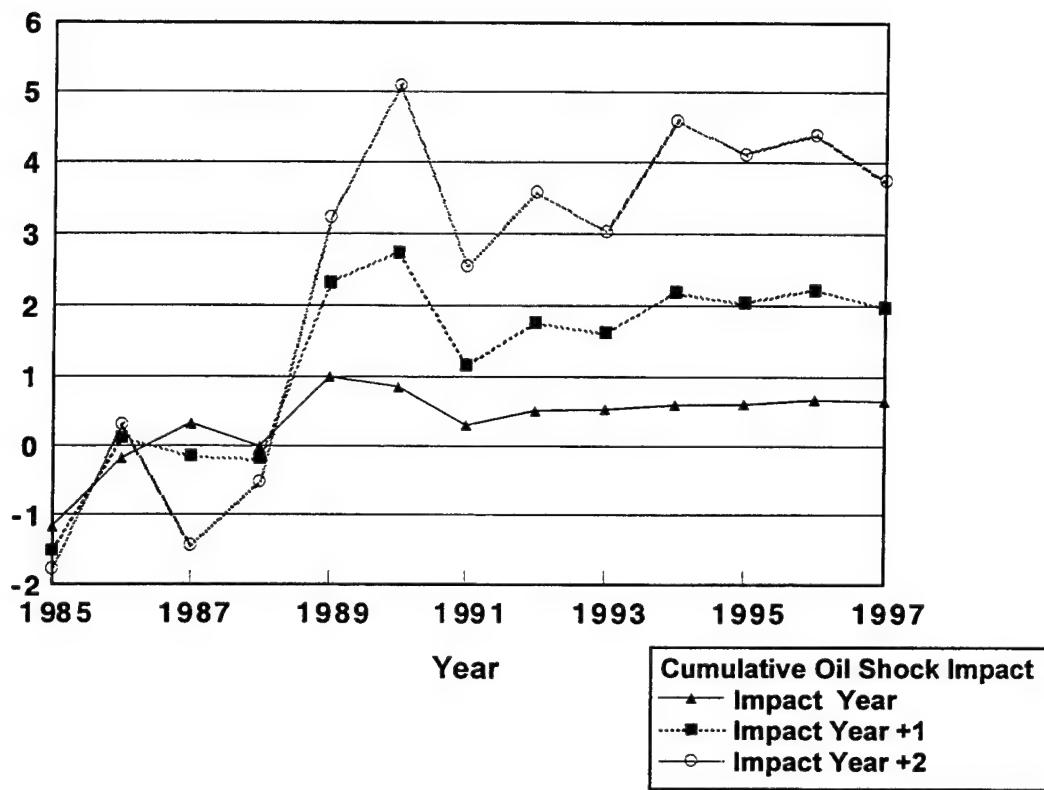


10% Oil Shock % Impact on Netherlands GDP

Figure 28

## Cumulative Oil Shock Impact: Netherlands

10% Oil Shock % Impact on Netherlands GDP



## **2.1.10 Norway**

A major oil producer and exporter, Group 1 member Norway has a highly globalized economy that ranks above the group norm in most categories. The Norwegian economy has tended to benefit from any increase in oil prices, and therefore will endure a lessening of those benefits due to naval forward presence. As Norway continues to globalize, however, the positive effects of oil price increases will diminish, at the same time that naval forward presence will have a smaller dampening influence on national economic growth.

### **2.1.10.1 Patterns of Globalization**

Norway ranks tenth on the A.T. Kearney/*Foreign Policy* Magazine Globalization Index, following Singapore, the Netherlands, Sweden, Switzerland, Finland, Ireland, Austria, and the United Kingdom. Its economy falls squarely in Group 1, although it is considerably more open to trade than is the norm for these countries (Table 27). Norway is slightly above the norm for general globalization and lies below the norm for financial globalization and global growth.

As with other Group 1 countries, there has been a fairly dramatic increase in the country's general globalization dimension (Figure 29) during the period of interest to this study (1985-1997). The financial flow dimension has also increased in recent years, but the trade openness dimension has fallen slightly since the early 1990s.

### **3.1.10.2 Globalization and Oil Price Shocks**

Because Norway is a major oil producer and exporter, oil price shocks predictably stimulated its GDP. The size of increase in incremental GDP, however, was reduced over time by increases in general globalization (Table 22). Increases in the openness dimension also reduced the economic benefits derived from oil price increases, although apparently only in the impact year.

In our oil price shock calculations the size of incremental GDP associated with a 10% oil price increase simulates the economy in

question in the absence of oil price increases minus the GDP path for three years (shock year plus two years). Since Norway is a major oil producer and exporter, the net figure for GDP had a negative sign. Regressing this increment in GDP on the country's dimensions of globalization produced negative signs on the general globalization, openness, and global growth dimensions. In other words, increases in all of these facets of globalization would produce a larger negative GDP term—in effect, a larger positive benefit for the Norwegian economy. Offsetting this was the financial dimension, which tended to lessen the increased GDP accruing to the country following an oil price increase.

Over time the patterns of globalization have produced a slight increase in the country's GDP following an oil price increase (Figures 30, 31). If in the near future the Norwegian economy converges to Group 1 norms (given that Norway lies above the Group 1 norm for structural openness and general globalization), future oil shocks should provide less of a stimulus to the Norwegian economy. This result would be reinforced by a movement of the financial dimension to the norm for Group 1 countries.

#### ***2.1.10.3 Implications for Naval Forward Presence***

Because the Norwegian economy benefits derived from oil price shocks, Norway would not be a major beneficiary of naval forward presence. Assuming, however, that as the country continues to globalize it will benefit less and less from, for example, a 10 percent increase in oil prices in any one year, losses due to naval forward presence are less than they would have been in the 1980s and 1990s.

**Table 21**  
**Dimensions of Globalization: Norway 1988-1996**

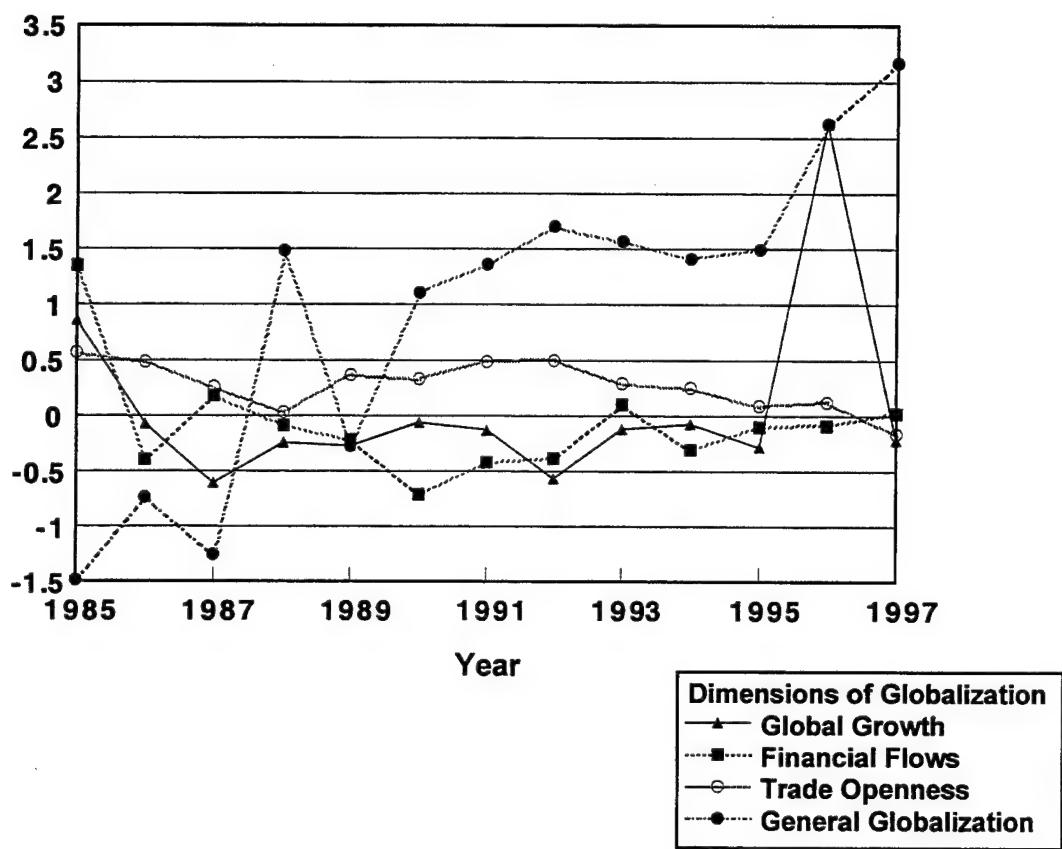
Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Norway	0.030	1.484	-0.091	-0.244
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Norway	0.367	1.348	-0.215	-0.578
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Norway	0.331	1.109	-0.712	-0.064
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Norway	0.486	1.363	-0.418	-0.130
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Norway	0.497	1.704	-0.382	-0.567
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Norway	0.292	1.571	0.100	-0.122
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Norway	0.252	1.413	-0.305	-0.076
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Norway	0.090	1.496	-0.103	-0.282
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706
1996	Norway	0.121	2.625	-0.086	0.355
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140

1997	Norway	-0.161	3.171	0.047	-0.222
	Group 1	-0.694	2.538	0.079	-0.159
	Group 2	0.461	0.028	-0.558	0.100
Average	Norway	0.231	1.728	-0.217	-0.193
	Group 1	-0.207	1.597	-0.072	-0.145
	Group 2	0.178	-0.077	-0.240	0.248

**Figure 29**

## **Patterns of Globalization: Norway**

**Factor Scores: Globalization Dimensions**



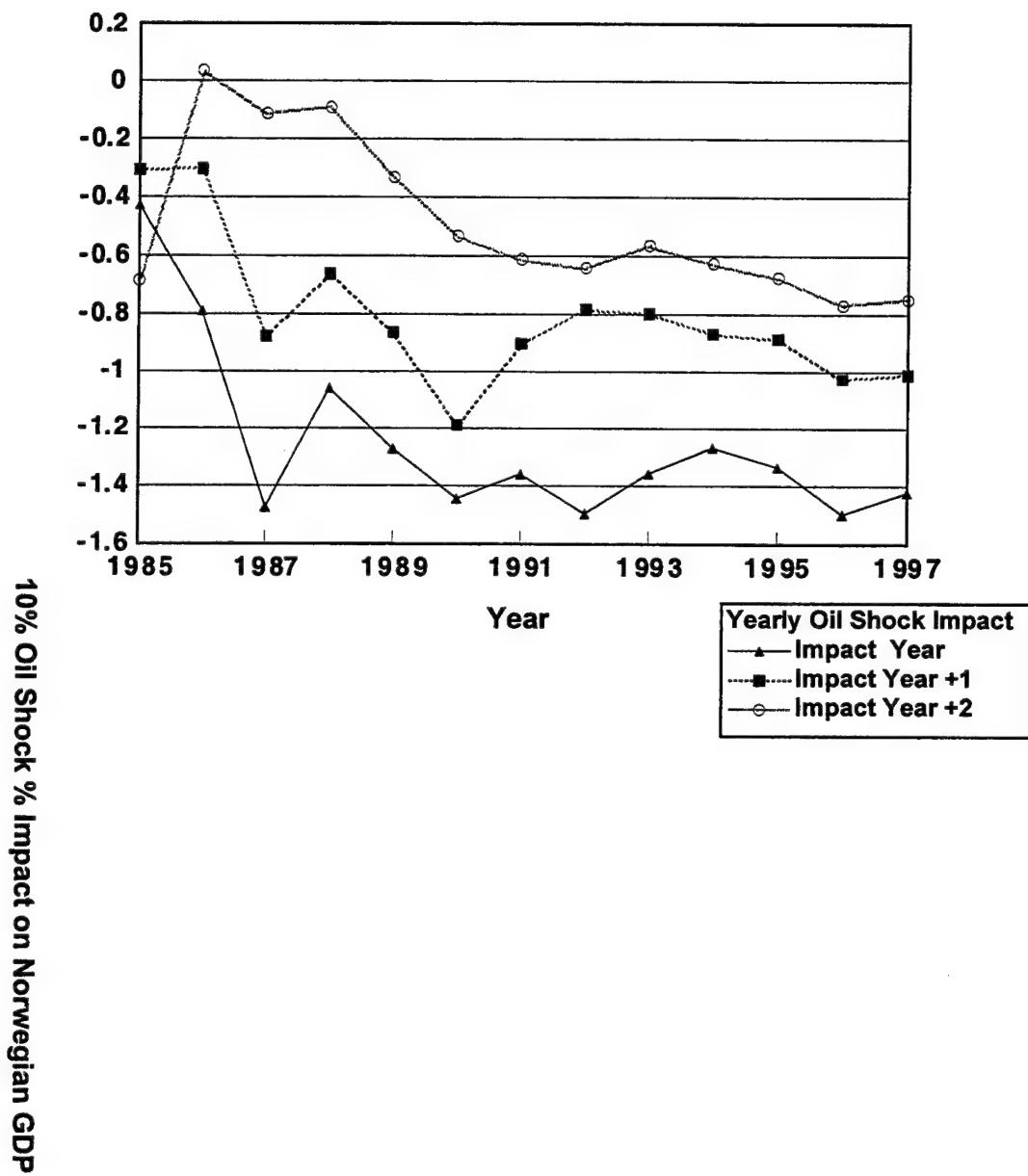
**Table 22**  
**Summary Oil Shock Impact Analysis: Norway**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b>Cumulative</b>				
Impact Year	(-)	(-)	+	(-)
Impact Year + 1	(-)	ins	+	(-)
Impact Year +2	(-)	ins	+	(-)
<b>Cumulative % GDP</b>				
Impact Year	(-)	(-)	ins	ins
Impact Year + 1	(-)	ins	+	ins
Impact Year +2	(-)	ins	+	ins
<b>Yearly</b>				
Impact Year	(-)	(-)	+	(-)
Impact Year + 1	ins	ins	ins	ins
Impact Year +2	ins	ins	ins	ins

Notes: Group 1 country. Norwegian data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

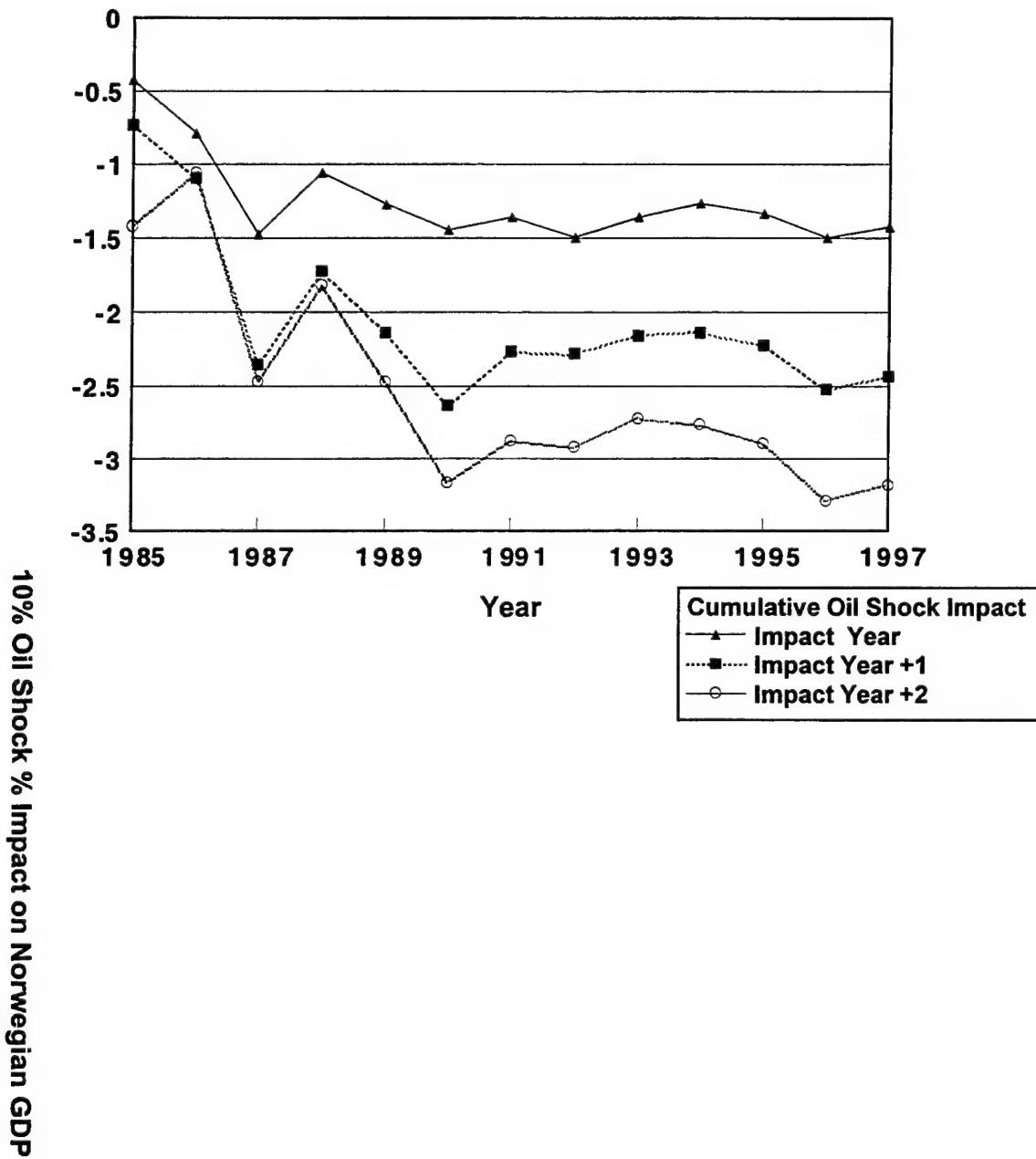
**Figure 30**

### **Yearly Oil Shock Impact: Norway**



**Figure 31**

## Cumulative Oil Shock Impact: Norway



## **2.1.11 Spain**

When Spain emerged from its long economic and political isolation following the death of dictator Francisco Franco in 1975, Spanish policymakers quickly took steps to bring its backward economy in line with the EU. As a result, per capita income has risen dramatically; exports have shifted from raw materials to manufactured and intermediate goods; Spanish banks are investing heavily in Latin America, making Spain the world's sixth largest foreign investor; and Spain itself has become an attractive destination for FDI. Spain's economy is classified as belonging to Group 1, where it scores below the norm for structural openness and general globalization, but above the norm for financial globalization. As Spain's economy reaches parity with the EU, oil price shocks will have an increasingly severe impact on GDP, therefore making Spain an obvious beneficiary of naval forward presence and crisis response.

### **2.1.11.1 *Patterns of Globalization***

The Spanish economy has made great strides in recent years. According to the IMF, Spain is catching up with its European peers. Its per capita GDP has increased from about 75 percent of the EU average in the mid-1970s to nearly 87 percent in 2001, with most of the growth taking place since 1997.

This progression up the development curve has gone hand-in-hand with a dramatic change in Spanish exports. While the export of foodstuffs fell from 53 percent of total goods and exports in 1964 to 13 percent by 2000, the share of nonfood consumer goods in exports more than doubled, from 12% percent to nearly 28%, and the export of intermediate goods (other than food and energy) doubled (from 21% to 42%).

Trade plays a far more important role in Spain's economy today than it used to, with exports of goods and services plus imports increasing from 27 percent of GDP in 1970 to 62 percent in 2000. Spanish banks also are playing an increasingly prominent role, particularly in Latin America, where they now control nearly 20 percent of Latin America's banking sector. Facilitating this flow of capital from Europe to Latin America, a stock exchange, the

Latbex, recently opened in Madrid to enable Latin American firms to be listed in Europe with prices quoted in euros.

Foreign direct investment from Spain has expanded in the last decade from less than 1 percent of GDP to nearly 10 percent, while FDI coming into the country has risen from just under 3 percent of GDP to nearly 7 percent. Spain has gone from being a net importer of investment on the order of 2 percent of GDP annually to being a net exporter by a margin of 3 percent. As a result of this shift, Spain is now the sixth largest investor in the world, trailing only the United Kingdom, the United States, France, Germany and the Netherlands.<sup>37</sup>

The IMF attributes these changes to globalization and the desire of Spanish policymakers to integrate with the rest of the world, after a long period of protectionism and political and economic isolation under the late Fascist dictator, Francisco Franco.

Several of these trends toward open trade began show up in the country's pattern of globalization over the last decade or so (Figure 32). The factor/discriminant analysis classifies Spain as a Group 1 country. Although a complete set of data for the country exists only for the period 1988 to 1996, it is possible to draw some comparisons with other Group 1 countries. Despite the significant advances in trade noted above, Spain scores below the norm on the structural openness dimension, as well as the general globalization dimension (Table 23). By contrast, the country is slightly above the norm for progress in financial globalization. Finally, the economy's growth in the global context is somewhat above the norm for Group 1 countries.

### **2.1.11.2 Globalization and Oil Price Shocks**

Analysis of the effects of globalization on the income losses associated with oil price shocks found that Spain had the normal Group 1 pattern of a positive sign associated with increased levels of general globalization (Table 24). This means that over time oil price shocks should have a stronger and stronger negative impact on the Spanish economy. This pattern is reinforced by a positive sign on the openness globalization dimension, i.e., increased openness to world market forces may create instability in the economy leading to larger declines in GDP associated with oil price shocks. Offsetting these tendencies is the negative sign on the financial dimension.

Increased capital flows may result in more investment and hence higher growth rates even during periods of oil price increases. It should be noted, however, that due to an incomplete set of data, these findings for Spain were based Group 1 global dimension norms.

With that same caveat in mind, the amount of Spanish GDP loss associated with oil price shocks (Figures 33, 34) increased in the years 1993-1997. This increase follows a decline from approximately 1990 to 1993, following a rather dramatic rise from 1986 to 1990. It is fairly safe to say that over the long run, Spanish GDP losses associated with oil price shocks will increase.

#### ***2.1.11.3 Implications for Naval Forward Presence***

The Spanish economy is rapidly closing the gap between itself and the EU, as well as other Group 1 countries. This being the case, and given the country's lag in the structural openness and general globalization dimensions, future increases in these aspects of Spanish globalization should produce greater losses in income stemming from oil price shocks. This trend is unlikely to be offset by the financial dimension, since Spain's is already above the Group 1 norm. If these patterns bear out, naval forward presence will play an increasingly important role in stabilizing the Spanish economy following sudden oil price increases.

**Table 23**  
**Dimensions of Globalization: Spain 1988-1996**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Spain	-0.533	0.979	0.045	0.677
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Spain	-0.417	0.673	0.082	0.691
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Spain	-0.278	0.646	-0.997	0.082
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Spain	-0.458	1.155	0.325	0.227
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Spain	-0.607	1.109	0.286	0.149
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Spain	-0.392	1.169	1.323	-0.508
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Spain	-0.606	1.282	-0.659	-0.343
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146

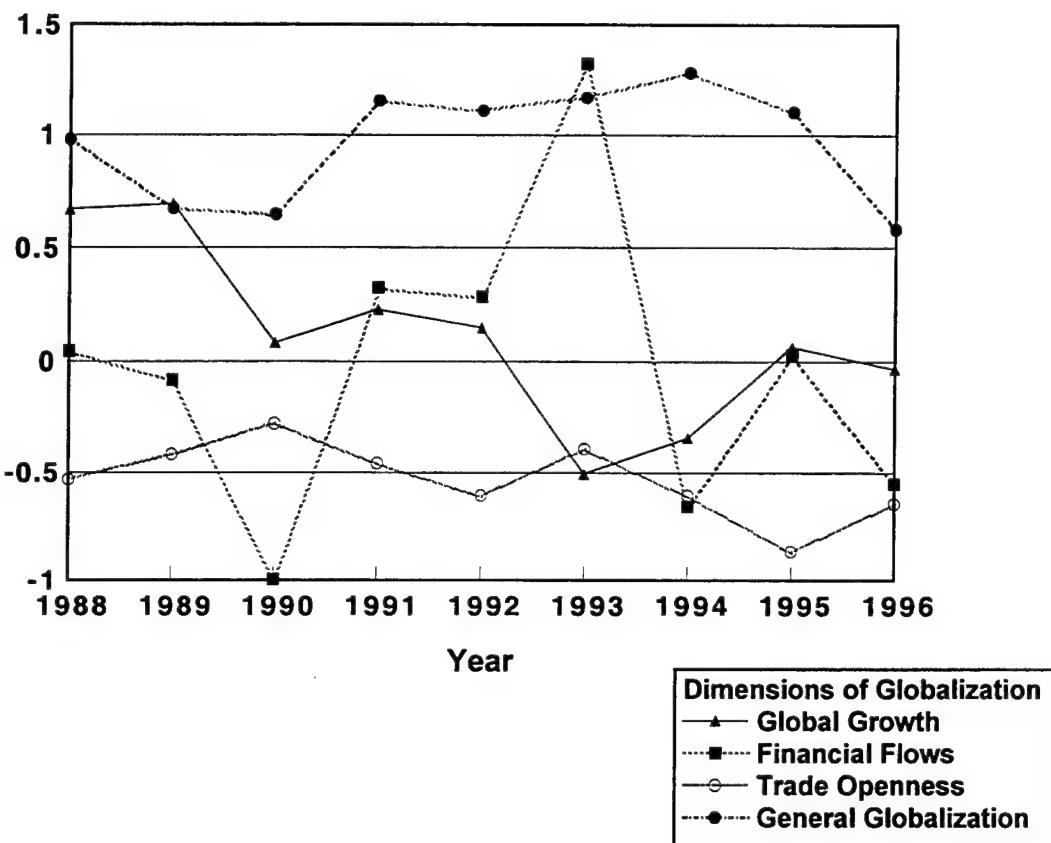
1995	Spain	-0.867	1.104	0.030	0.063
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706
1996	Spain	-0.646	0.582	-0.551	-0.033
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
Average	Spain	-0.534	0.967	-0.013	0.112
	Group 1	-0.153	1.492	-0.089	-0.144
	Group 2	0.146	-0.089	-0.204	0.264

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**Figure 32**

## **Patterns of Globalization: Spain**

**Factor Scores: Globalization Dimensions**



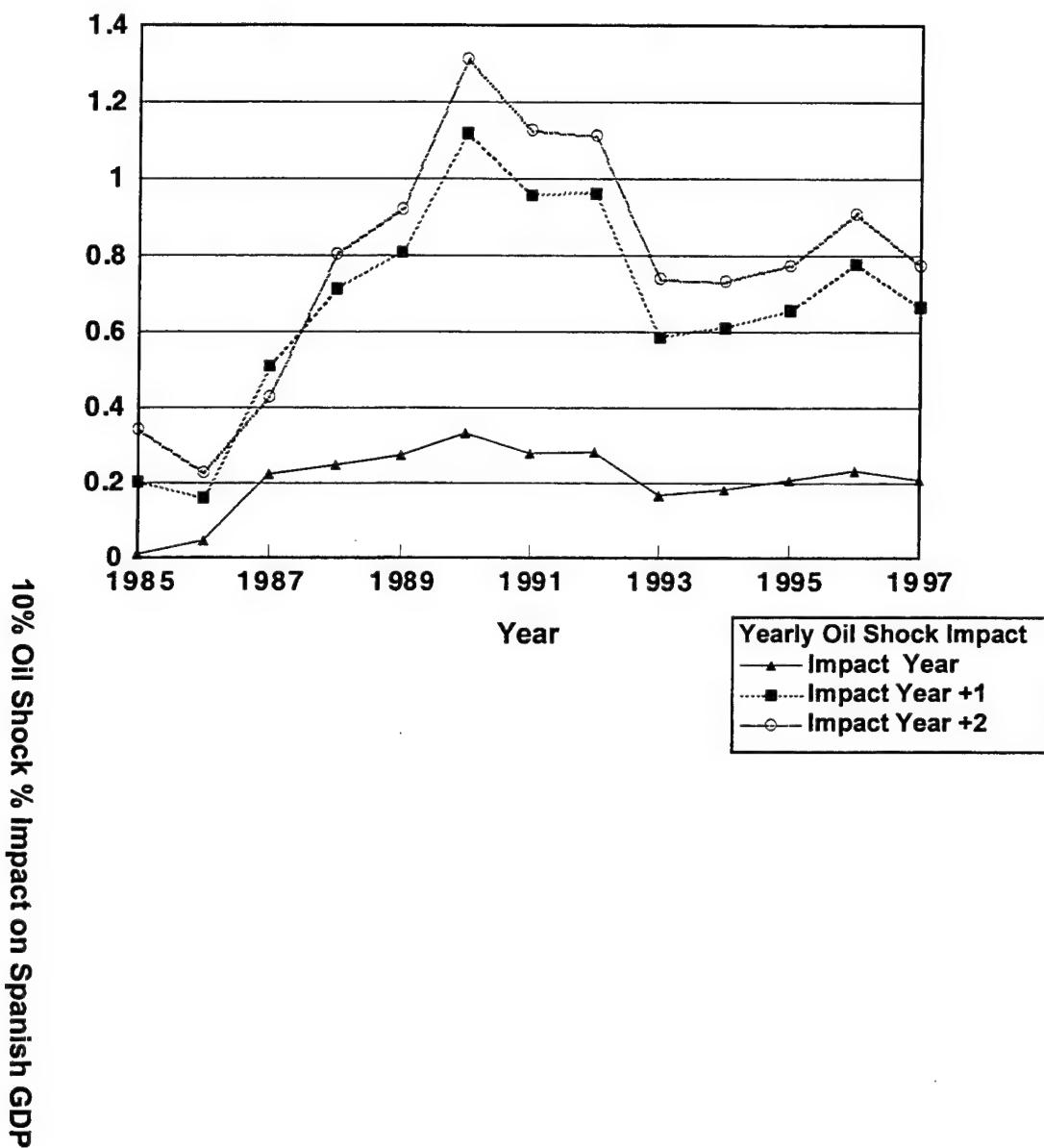
**Table 24**  
**Summary Oil Shock Impact Analysis: Spain**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	+	(-)	ins
Impact Year + 1	+	+	(-)	ins
Impact Year +2	+	+	(-)	(-)
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	+	(-)	ins
Impact Year + 1	+	ins	(-)	ins
Impact Year +2	+	+	(-)	ins
<b><u>Yearly</u></b>				
Impact Year	+	+	(-)	ins
Impact Year + 1	+	+	(-)	(-)
Impact Year +2	+	+	(-)	(-)

Notes: Group 1 country. Group 1 data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

**Figure 33**

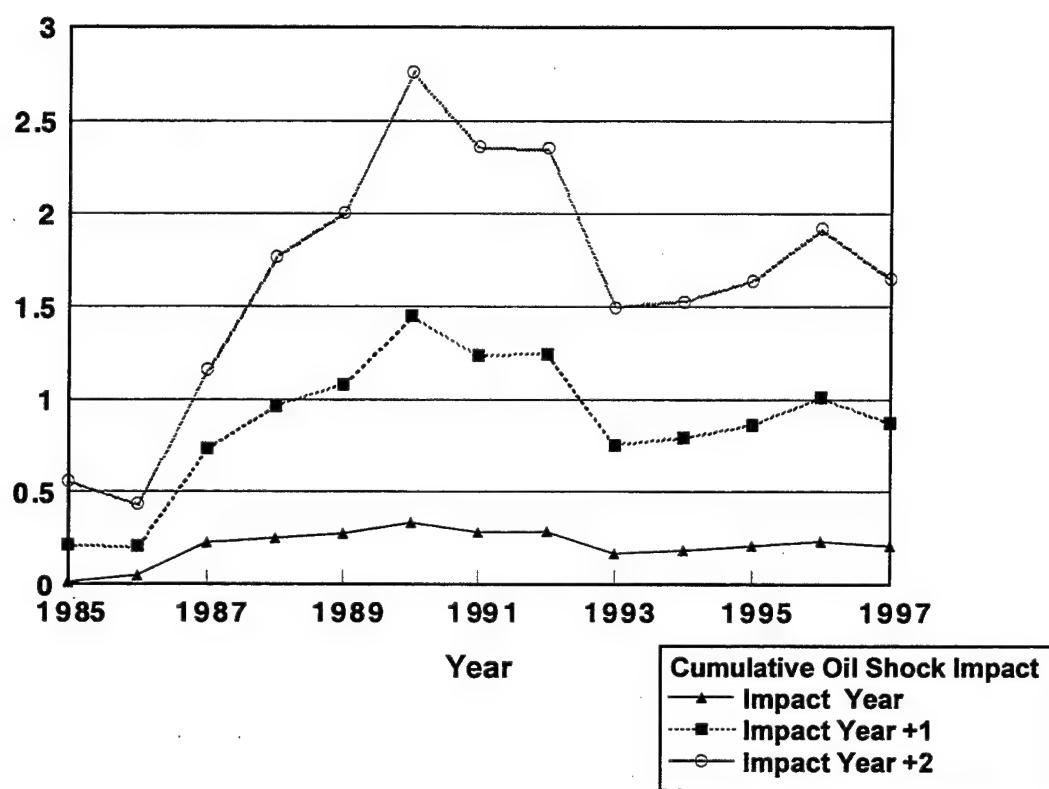
### **Yearly Oil Shock Impact: Spain**



**Figure 34**

### Cumulative Oil Shock Impact: Spain

10% Oil Shock % Impact on Spanish GDP



### **3.1.12 Sweden**

A Group 1 country, Sweden until recently has had one of the highest per capita GDPs in the world. It is the home of several prominent multinational and manufacturing concerns, as well as being a financial power. Over the last three decades, however, the Swedish economy has been in a gradual decline compared to other highly industrialized countries. Some see this as a result of Sweden's high tax rates and relatively closed labor markets, which may become unsustainable under globalization. Globalization dimension analysis gives mixed results concerning the effect of oil price shocks on Swedish GDP, but the trend seems to indicate that suppression of oil price shocks through naval forward presence will benefit the Swedish economy in the long run.

#### ***3.1.12.1 Patterns of Globalization***

Sweden is a small country of fewer than 9 million people, located at the northern edge of Europe. Despite its size, Sweden has produced an extraordinary array of multinational companies—world beaters such as Ericsson, Electrolux, Volvo and Asea. Some economists, such as Christopher Brown-Humes, however, warn that the omens for continued success are not entirely promising.<sup>38</sup> Notwithstanding its apparent strength, the Swedish economy has been in a relative decline for the past thirty years. Per capita GDP slipped from third in the world in 1970 to 18th place by the end of the century. Sweden's economy lacks what are commonly considered two of the prerequisites for success: low taxes and flexible labor markets. Most experts think that globalization will force a number of changes in Sweden, because its historic high tax rate is not sustainable in an increasingly global economy.

Available data from Sweden for the factor/discriminate globalization dimension analysis only cover the period 1988 to 1994. Based on this period, Sweden, a Group 1 country, was more open to trade than is the norm for its group (Table 25). The economy also had a significantly higher degree of general and financial globalization. Reflecting Sweden's longer-run economic slowdown, however, the country's global growth dimension was below the norm for the Group 1 countries. Recent trends show a

rising degree of financial globalization and a slight decline in general globalization (Figure 35).

### **3.1.12.2 *Globalization and Oil Price Shocks***

Sweden displays the normal pattern for Group 1 countries. Positive signs associated with increased levels of general globalization and openness to world market forces leave the Swedish economy increasingly vulnerable to oil price shocks (Table 26). Offsetting this effect are the negative signs on the financial and growth dimensions. Increased capital flows may result in more investment and hence higher growth rates even during periods of oil price increases, while rising levels of trade may help alleviate domestic bottlenecks that create stresses on the economy and lower GDP growth. Under these circumstances, the net impact of an oil price shock is difficult to assess without further detailed study. It does appear, however, that the financial and growth dimensions work mainly in the short-run, while the general globalization and openness dimensions influence the economy in the longer term. The recent pattern shows an increase in the severity of oil price shocks on Sweden (Figures 36, 37), suggesting that in the net the forces tending to reduce Swedish GDP following oil price increases have been greater than those tending to resist this movement.

### **3.1.12.3 *Implications for Naval Forward Presence***

The recent dominant trend of increasing losses to Sweden's GDP following oil price shocks suggests that in the future naval forward presence will be valuable to the Swedish economy by suppressing oil price increases.

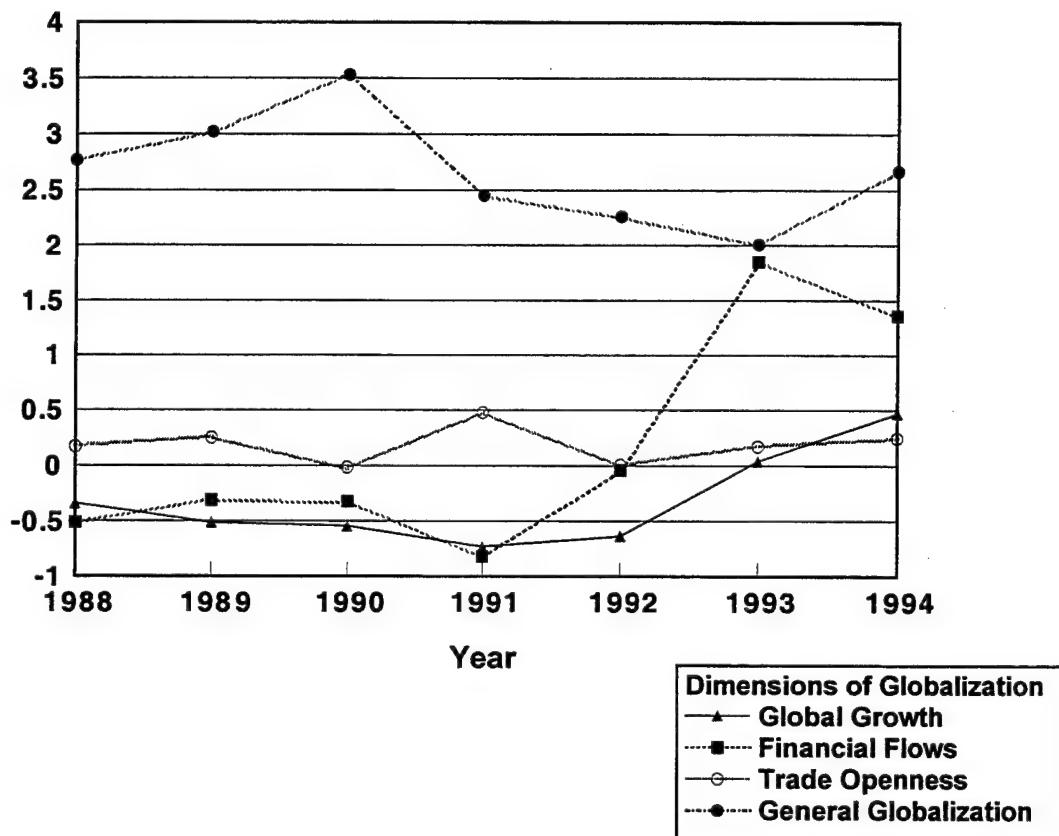
Table 25

## Dimensions of Globalization: Sweden 1988-1996

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Sweden	0.168	2.766	-0.511	-0.342
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Sweden	0.248	3.091	-0.312	-0.512
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Sweden	-0.018	3.529	-0.324	-0.546
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Sweden	0.476	2.451	-0.820	-0.731
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Sweden	0.004	2.261	-0.044	-0.634
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Sweden	0.169	2.008	1.853	0.035
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Sweden	0.244	2.667	1.358	0.466
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
Average	Sweden	0.184	2.682	0.171	-0.323
	Group 1	-0.108	1.441	-0.077	-0.140
	Group 2	0.152	-0.092	-0.172	0.219

**Figure 35**

### **Patterns of Globalization: Sweden**



Factor Scores: Globalization Dimensions

**Table 26**  
**Summary Oil Shock Impact Analysis: Sweden**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	ins	(-)	(-)
Impact Year + 1	+	ins	(-)	(-)
Impact Year +2	+	+	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	+	(-)	(-)
Impact Year + 1	+	ins	ins	(-)
Impact Year +2	+	+	ins	ins
<b><u>Yearly</u></b>				
Impact Year	+	ins	(-)	(-)
Impact Year + 1	+	+	ins	ins
Impact Year +2	+	+	(-)	ins

Notes: Group 1 country. Group 1 data used in the regression analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant; - indicates a factor weakening the impact of oil price increases on GDP.

Figure 36

### Yearly Oil Shock Impact: Sweden

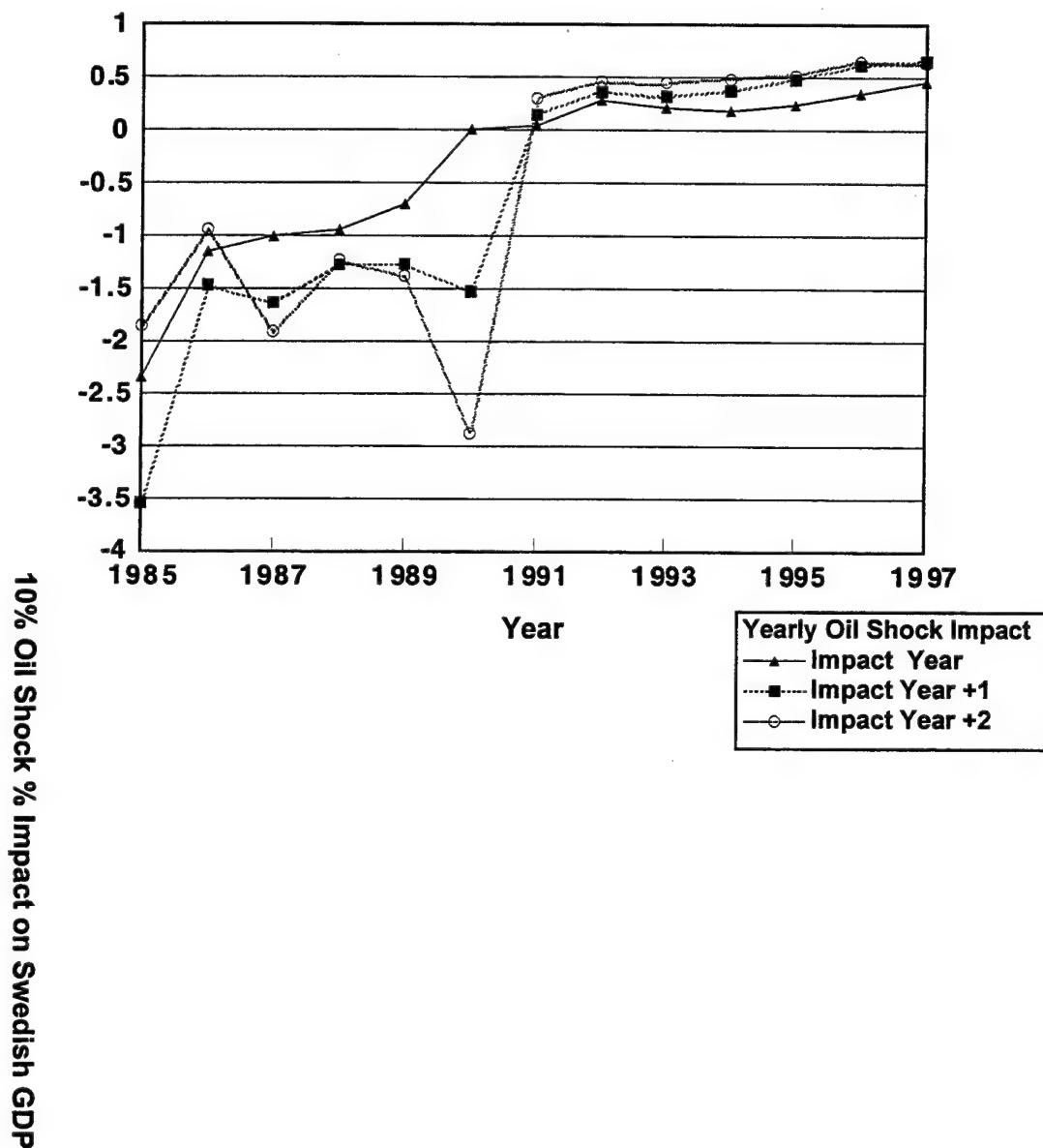
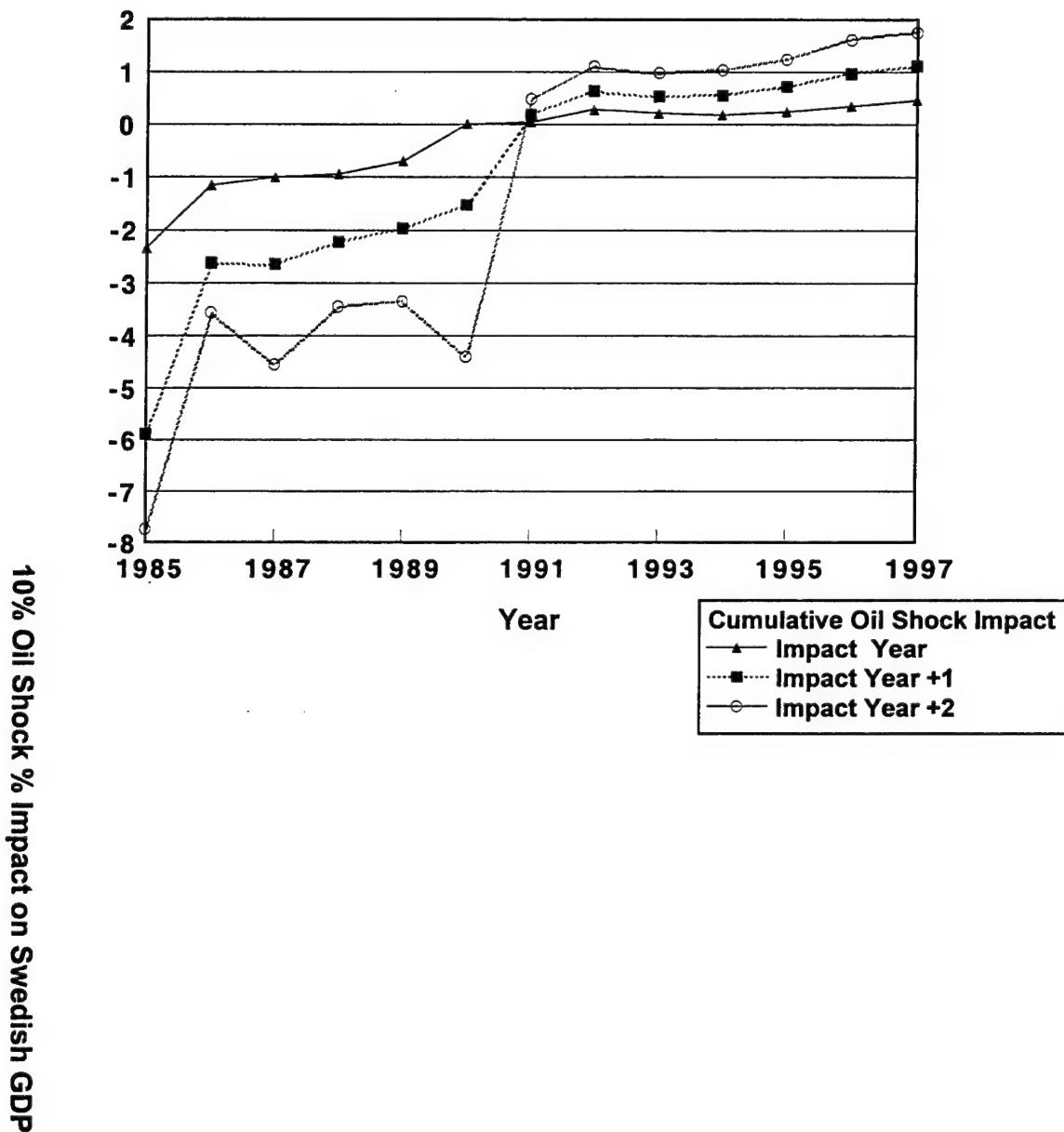


Figure 37

## Cumulative Oil Shock Impact: Sweden



## **2.1.13 United Kingdom**

The United Kingdom's economy has, like most highly developed economies, shifted away from manufacturing toward the service sector and greater globalization. Above the Group 1 norm in the general and financial dimensions, Britain lags in openness to global markets. Policymakers are currently preoccupied with maximizing Britain's role in European integration and the move to a single currency, while minimizing the impact on national sovereignty and competitiveness. The negative effect of oil price shocks on British GDP has declined in recent years, but price stabilization brought by naval forward presence should bring benefit in the longer term.

### **2.1.13.1 *Patterns of Globalization***

The British economy is about half the size of Germany's, and ties with France for the position of fourth largest economy in the world. As in most developed countries, manufacturing in the UK has declined relative to the services sector and currently represents about one fifth of output. Two severe recessions in the early 1980s and 1990s, combined with the government's refusal during the 1980s to extend state subsidies to ailing sectors, reinforced this trend.

Globalization has affected many facets of the British economy. Foreign investment activity in the United Kingdom is central to the economy, with the proportion of foreign-owned assets in the manufacturing sector around 20 percent. Foreign-owned companies provide 16 percent of the country's manufacturing employment, 22 percent of its net output, and 27 percent of its net capital expenditure. The United Kingdom is the developed world's second biggest recipient of inward investment. The United States and Japan have invested more in Great Britain than in any other European country.

With regard to the norm for Group 1 countries, the United Kingdom is more open to trade, has a considerably higher degree of general globalization, and a higher degree of financial globalization (Table 27). On the other hand, Britain lags behind the norm for this group in terms of growth in the global market. As with other Group 1 countries, the most dramatic change in England's globalization

over the last 15 years has been the increase in its general globalization (Figure 38). Britain's other dimensions of globalization have been relatively stable since the late 1980s.

Globalization may accelerate in Britain over the next few years. The Blair government recognized the imperatives of competitive pressure for innovation in a world where increasing and intensified international trade, finance, and foreign direct investment are a given. For Britain, globalization involves first and foremost European integration, and the issues of compromised sovereignty that follow from the Maastricht Treaty, the European Monetary Union, and the single currency initiative. From this perspective the government's aims are quite clear: to position the country in a way that will maximize its influence in Europe as well as its success in global competition.<sup>39</sup>

#### **2.1.13.2 *Globalization and Oil Price Shocks***

England's general globalization term has the normal positive sign found in Group 1 countries, meaning that over time oil price shocks have had a stronger and stronger negative impact on Britain's GDP (Table 28). There are no offsetting effects from the other dimensions of globalization, although the strength of these shocks has stabilized in recent years (Figures 39, 40).

#### **2.1.13.3 *Implications for Naval Forward Presence***

The United Kingdom recently has suffered less from oil price shocks than it had in the past, perhaps due to offsetting benefits from the sale of North Sea oil. While naval forward presence/crisis response may not offer an immediate benefit to Britain's economy, over the longer run price stabilization should have a salutary effect as the British economy continues to globalize.

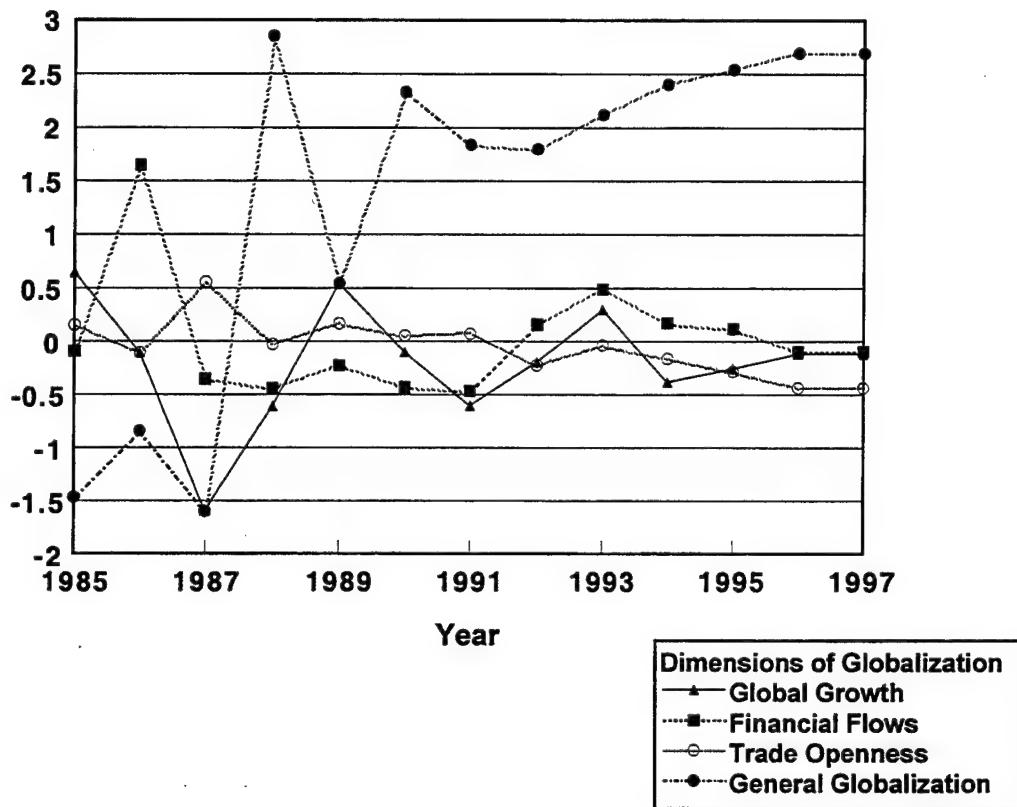
**Table 27**  
**Dimensions of Globalization: United Kingdom 1988-1996**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	UK	-0.026	2.854	-0.441	-0.612
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	UK	0.171	2.891	-0.226	-0.530
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	UK	0.054	2.332	-0.433	-0.102
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	UK	0.073	1.842	-0.467	-0.606
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	UK	-0.223	1.800	0.159	-0.1961
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	UK	-0.033	2.120	0.491	0.297
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	UK	0.244	2.667	0.173	-0.384
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	UK	-0.281	2.543	0.120	-0.255
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706

1996	UK	-0.435	2.697	-0.091	-0.119
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
Average	UK	-0.051	2.416	-0.079	-0.279
	Group 1	-0.153	1.492	-0.089	-0.144
	Group 2	0.146	-0.089	-0.204	0.264

**Figure 38**

## **Patterns of Globalization: UK**



Factor Scores: Globalization Dimensions

**Table 28**

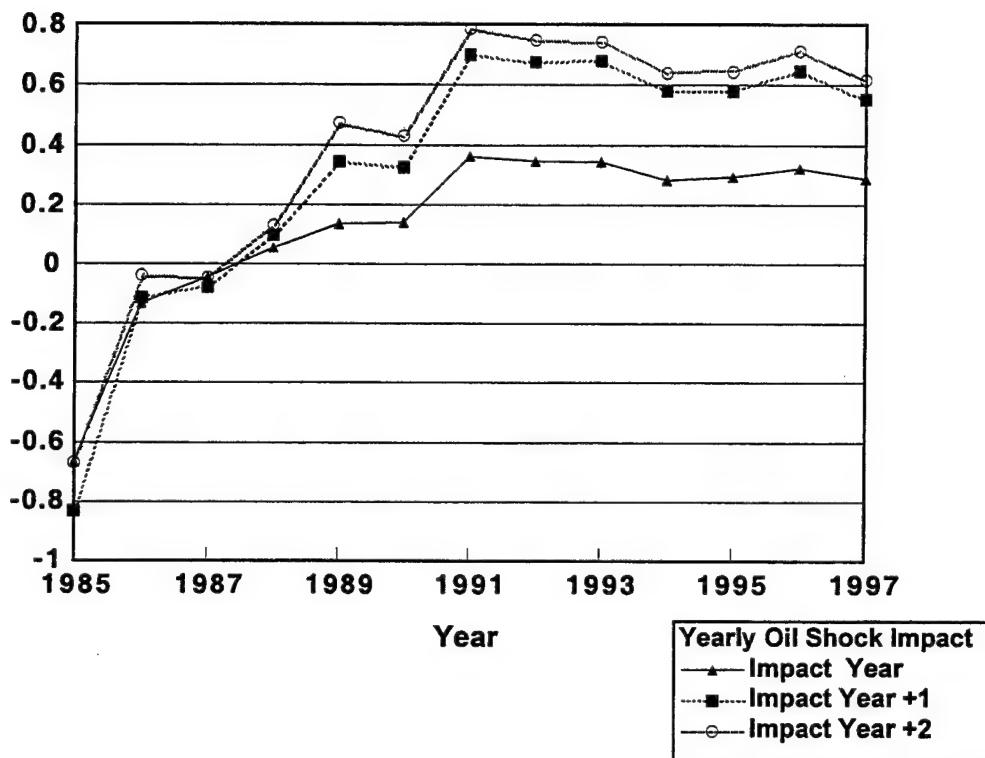
**Summary Oil Shock Impact Analysis: United Kingdom**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	+	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b><u>Yearly</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins

Notes: Group 1 country. British data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant; - indicates a factor weakening the impact of oil price increases on GDP.

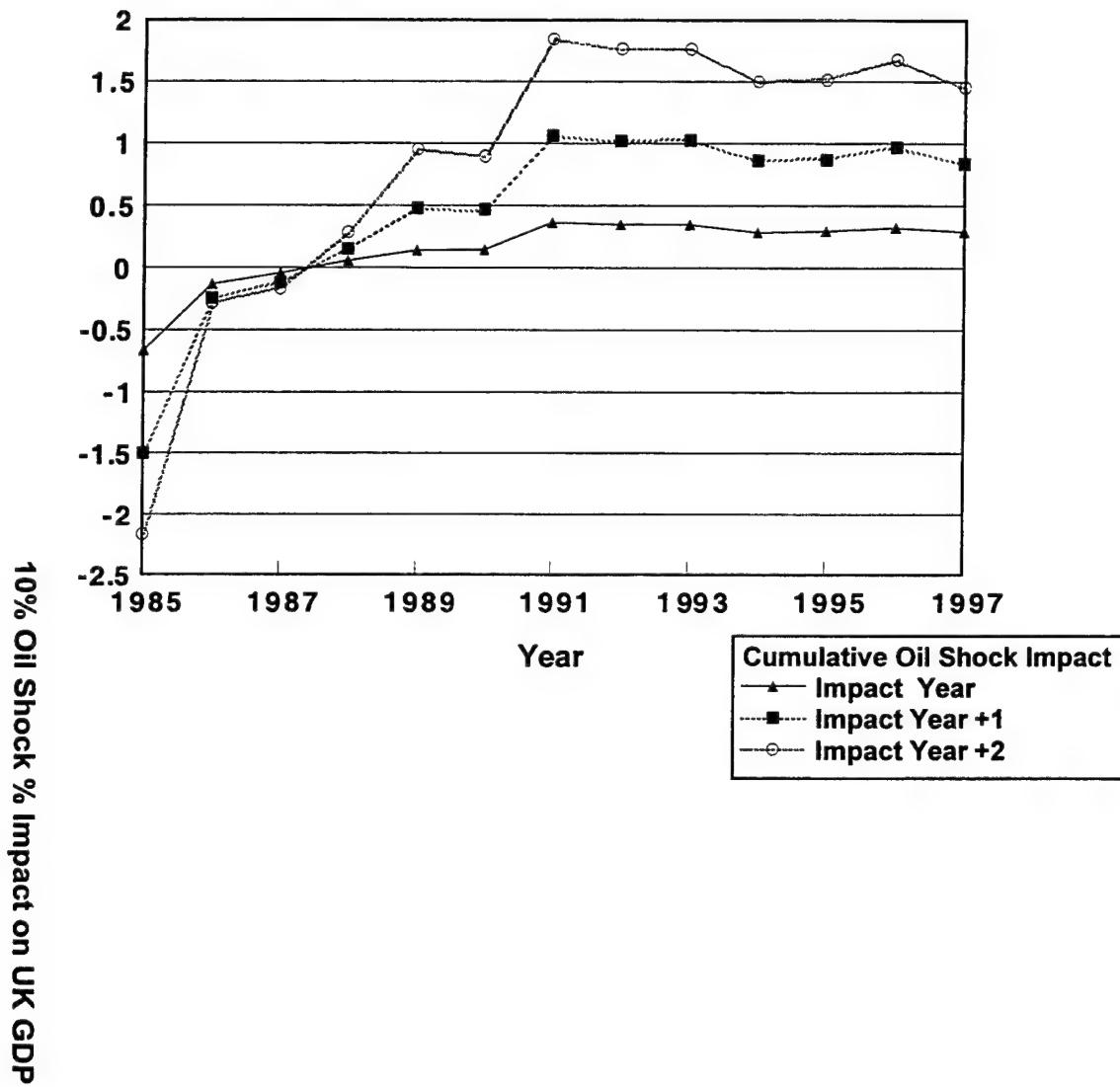
Figure 39

### Yearly Oil Shock Impact: UK



**Figure 40**

## Cumulative Oil Shock Impact: UK



## **2.1.14 United States**

The United States is classified in this study as a Group 1 endogenous growth country. Many believe the United States economy to be the most globally integrated in the world, but the findings do not bear out that assumption in all but the general globalization dimension. Despite being an oil producer, its level of integration makes the United States vulnerable to oil price shocks, and therefore highly likely to benefit from the stabilizing effects of naval forward presence/crisis response.

### **2.1.14.1 *The Economy***

The United States is one of the most advanced economies in the world. It leads the way in the information technology revolution and in many other areas of technical innovation. Manufacturing accounts for less than 20% of GDP, while the agricultural sector is very small, but also very productive. The United States is far and away the world's leading economic power. Its GDP totaled US \$9.3 trillion in 1999; assuming international purchasing power parity, this was 3 times the size of Japan's output, 4.8 times the size of Germany's, and almost 7 times the size of the United Kingdom's. Although the volume of its exports and imports exceeds that of any other country, the value of the United States' external sector as a percentage of its GDP is comparatively low. Exports of goods and services accounted for less than 11% of GDP in 1999, considerably less than the European Union's 25-29% in recent years.

Strong economic growth combined with low inflation and a pickup in labor productivity growth has led many observers of U.S. economic conditions to proclaim the existence of a "new economy" in the United States. The adoption of new technology in conjunction with globalization are thought to have changed the underlying economic relationships in the economy so that continued strong growth and low inflation are possible. Thus, although globalization and the new economy are somewhat different phenomena, their possible overlap has often led them to be discussed simultaneously in the literature.

Despite the amount of attention that the term "new economy" has received, there is little consensus on what is now different about

the U.S. economy and whether such a difference has fundamentally changed the way in which the economy works. The various interpretations of what constitutes the “new economy” can be organized into three different but related categories:<sup>40</sup>

1. The long-run growth view. In this interpretation of the new economy, higher long-term growth is achieved through a permanently higher growth rate in productivity. The high rate of productivity growth stems primarily from continuous innovation in IT (information technology), as well as from the effects of globalization and deregulation. Empirical evidence suggests that there is a link between production and widespread use of computers, and the pickup in labor productivity in the second half of the 1990s. Based on available data, however, it is not yet possible to conclude whether the shift to higher productivity growth is sustainable. The substantial increase in productivity associated with IT in recent years may represent simply a one-time transition to a higher level of productivity because of a major change in technology. This can be considered an “old economy” process, in the sense that it represents the traditional process of development, adoption and diffusion of new technologies.
2. The positive feedback view. In this view, the “new economy” is characterized by a pickup in total factor productivity growth across many sectors based on the adoption of IT. This shift results in increasing returns to scale, other network economies, and positive spillover effects. In other words, investment in IT in one firm improves the productivity of other firms as they are able to work together more efficiently. Although there is anecdotal evidence to support this theory, to date there is little solid empirical evidence that such positive feedback effects across industries are more important and pervasive now than in the past.
3. The resource utilization view. This version of the “new economy” is based on the observation that during the recent expansion, unemployment has declined below most estimates of the natural rate of unemployment (NAIRU) without spurring inflation, implying that NAIRU must have declined. Proponents of this theory argue that inflationary pressures in the United States have remained subdued because of

globalization (increased competition for domestic firms facing less expensive imports) and IT (increasing productivity and efficiency). Because actual productivity is increasing faster than what workers perceive, wage demands are muted, and it appears as though the NAIRU has declined. Accordingly, labor and other utilization rates can be higher without triggering inflationary pressures. At present, however it is extremely difficult to disentangle whether the decline in NAIRU is permanent or simply related to temporary factors such as the period of time it takes for workers to incorporate higher trend productivity into wage demands. In addition, positive supply shocks—for example the past weakness in commodity prices, the strength of the US dollar, and restrained health care costs—may temporarily have reduced inflationary pressures, but have not changed any of the underlying relationships in the economy.

The debate over the existence and implications of a new economy has not been resolved and continues largely because of the difficulty in establishing a definitive link between IT investment and productivity. At a minimum, however, the new economy literature makes a strong case that the current phase of globalization is different from that experienced in the years prior to World War I.

Other studies not relying on links with a possible new economy also concluded that the current phase of globalization is unique when compared with the state of affairs at the turn of the century. For example, in "Is Globalization Today Really Different than Globalization A Hundred Years Ago?", Bordo, Eichengreen, and Irvin conclude that:

1. The globalization of commodity and financial markets is historically unprecedented. Superficial comparisons with the late nineteenth century notwithstanding, the international integration of capital and commodity markets goes further and runs deeper than ever before.
2. The trade tensions and problems of financial insatiability that have accompanied the advent of highly integrated commodity and financial markets should not come as a surprise. The period of pre-World War I commodity and financial market integration that is our basis for comparison also was marked by trade tensions and financial instability. The surprise is that

these problems are not even more severe today, given that financial market integration is so much greater than it was at the turn of the previous century.<sup>41</sup>

As Bordo et al. note, accounting for this phenomenon is difficult. One possibility is that the institutions built in the interim have played a stabilizing role. At the national level, this has meant the creation of social and financial safety nets. At the international level, these institutions include the World Trade Organization (WTO), the International Monetary Fund (IMF), and the Basle Committee of Banking Supervisors. Although they have come under fire for some of their policies, the international organizations probably have had a beneficial effect in light of the historically high correlation between the level of integration on the one hand and the levels of trade conflict and financial stability on the other. The domestic financial safety net may raise fears of a moral or social hazard, but it prevents widespread financial catastrophe. Contingent protection may prevent the full gains from trade from being realized, but it sustains a critical mass of political support for open markets by dampening some of the negative effects of free trade. In the absence of global governance for global markets, outcomes would suggest that existing multilateral institutions provide a substitute for some of the functions a truly global body might undertake.

The other explanation for the contrast between today's relative stability and the turmoil of the past is that the gradual maturation of markets over time has made it easier to live with globalization. The development of better auditing and accounting practices at the national level has made it easier to apply those same practices to international transactions, with stabilizing consequences. The development of the futures markets on which producers can hedge their exposure to world prices has made it easier for them to live with global markets that deliver outcomes beyond their control. These processes were already underway in the 19<sup>th</sup> Century, but they have since been considerably developed .

Both the new economy literature and studies like those of Bordo et al. establish a good case for treating the current period as historically unique. One implication of this viewpoint is that many long-established economic linkages are being strengthened or

weakened as a result of the rapid and profound changes in the overall environment created by the globalization process.

#### ***2.1.14.2 Patterns of Globalization***

The factor/discriminant analysis of US globalization employed in this study found some significant differences between the U.S. economy and the norm for Group 1 countries (Table 29): (1) The U.S. structural openness dimension scores considerably below the group average, suggesting that trade plays less of a role in the American economy than it does in other advanced industrial nations; (2) the general globalization dimension is also somewhat below the group norm; and (3) financial globalization and growth in the world market are above the pattern typically found in other advanced countries.

Recent patterns of U.S. globalization (as in the other Group 1 countries) have been characterized by a rapid increase in the general globalization dimension (Figure 41). Contrary to popular belief, however, the U.S. position in global openness, financial flows and expansion in the global economy has not dramatically increased relative to other countries. This finding is consistent with that of Robert Dunn, who went on to conclude that the U.S. economy is far from being completely globalized.<sup>42</sup> Our findings suggest that at least with regard to the general globalization dimension, significant movement has been made in that direction.

#### ***2.1.14.3 Globalization and Oil Price Shocks***

With regard to the impact of oil price shocks on its economy, the United States has the normal pattern of a positive sign (Table 30) associated with increased levels of general globalization. Over time and everything else being equal, there has been a significant increase in the amount of GDP loss associated with oil price shocks (Figures 42, 43).

#### ***2.1.14.4 Implications for Naval Forward Presence***

The above finding suggests that in the absence of offsetting effects produced by the other dimensions of globalization, future naval forward presence and crisis response should be increasingly important to the U.S. economy by dampening oil price increases.

**Table 29**

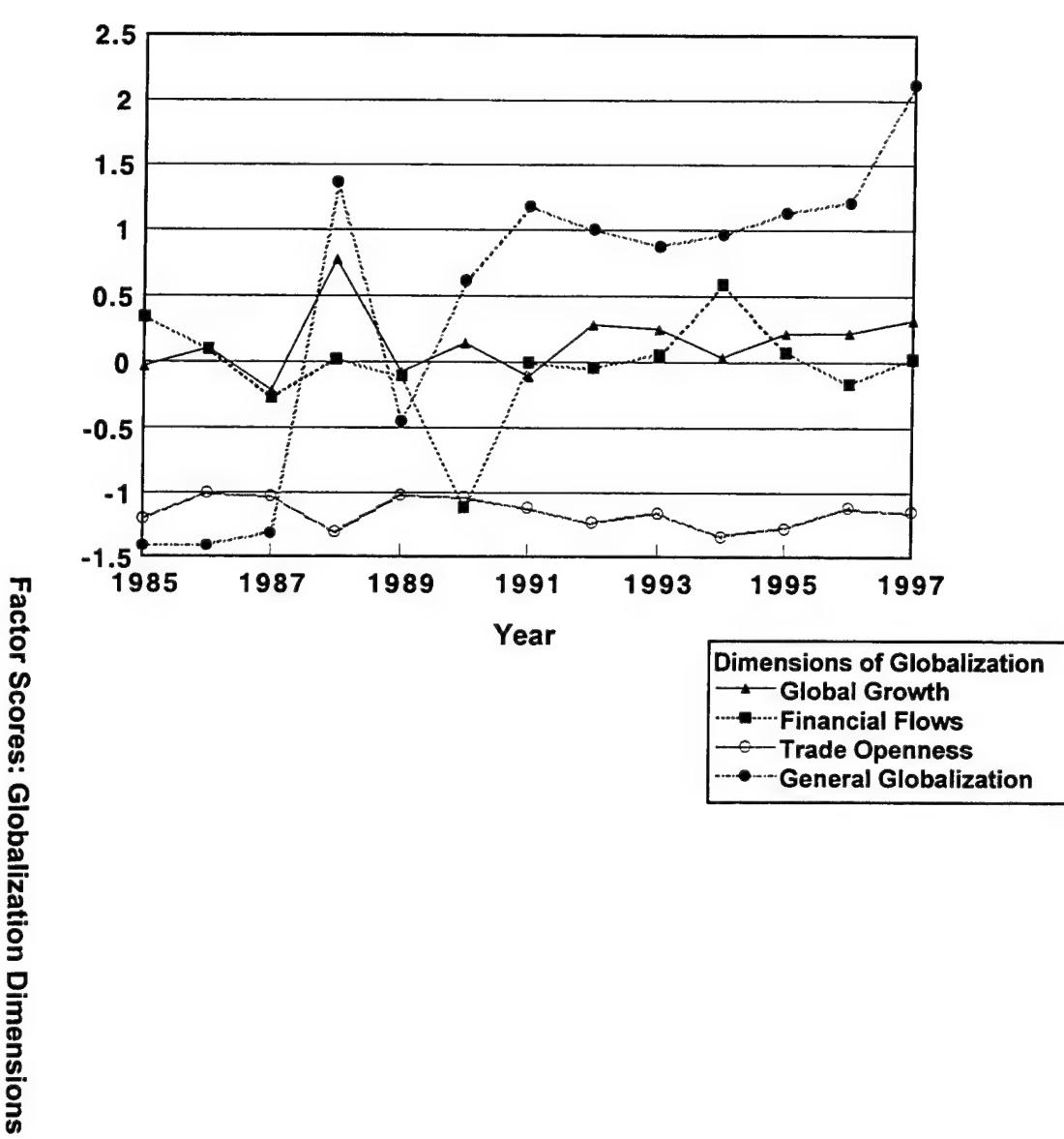
**Dimensions of Globalization: United States 1988-1996**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	US	-1.305	1.367	0.023	0.773
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	US	-1.109	1.238	-0.104	-0.078
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	US	-1.031	0.615	-1.114	0.143
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	US	-1.116	1.185	-0.003	-0.108
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	US	-1.229	1.007	-0.041	0.280
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	US	-1.159	0.876	0.054	0.247
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	US	-1.342	0.968	0.590	0.036
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	US	-1.278	1.134	0.074	0.214
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706

1996	US	-1.115	1.213	-0.160	0.217
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
1997	US	-1.146	2.124	0.024	0.316
	Group 1	-0.694	2.538	0.079	-0.159
	Group 2	0.461	0.028	-0.558	0.100
Average	US	-1.183	1.173	-0.066	0.204
	Group 1	-0.207	1.597	-0.072	-0.145
	Group 2	0.178	-0.077	-0.240	0.248

**Figure 41**

### **Patterns of Globalization: US**



**Table 30**

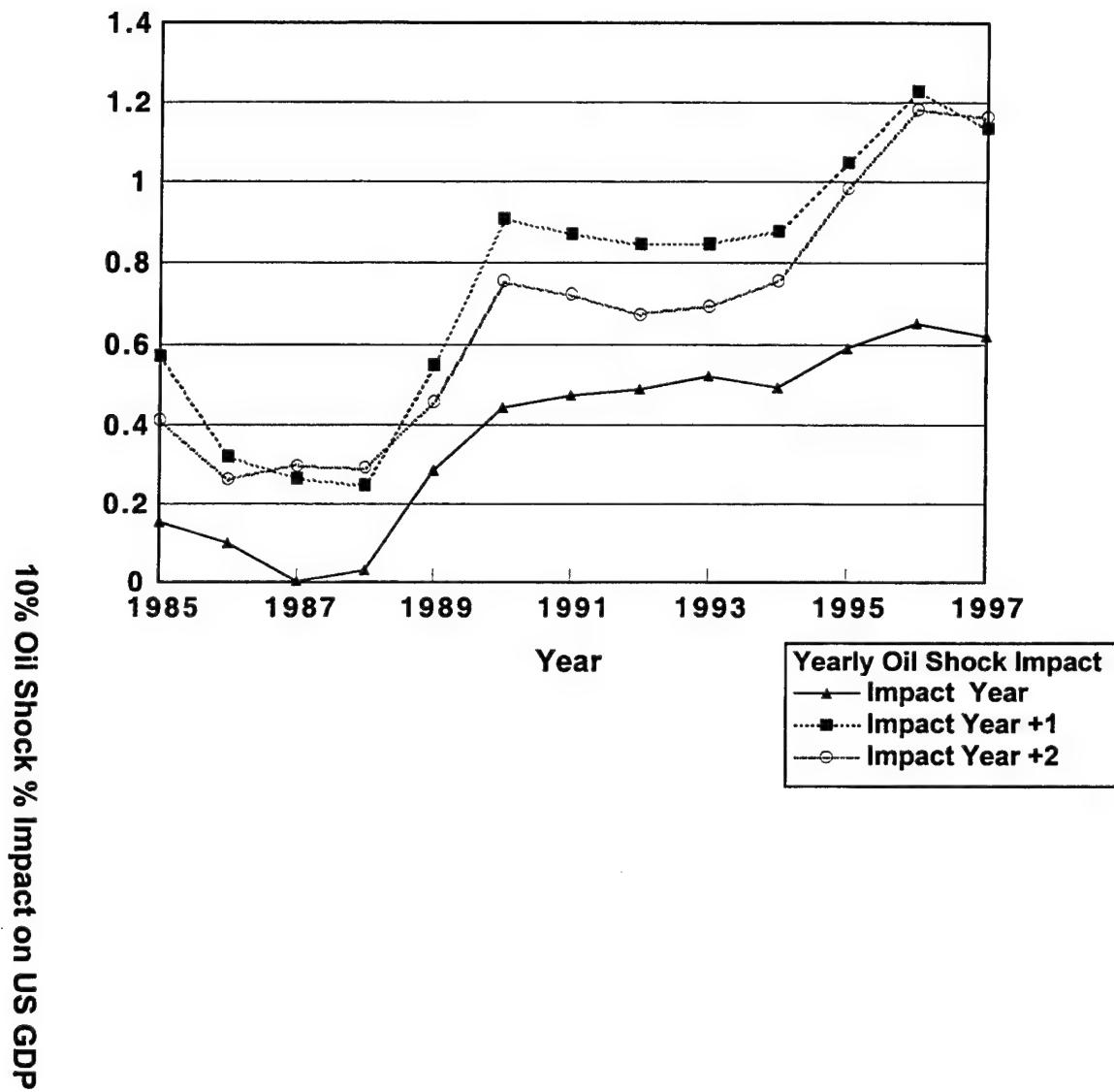
**Summary Oil Shock Impact Analysis: United States**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins
<b><u>Yearly</u></b>				
Impact Year	+	ins	ins	ins
Impact Year + 1	+	ins	ins	ins
Impact Year +2	+	ins	ins	ins

Notes: Group 1 Country. US data used in the analysis. Complete analysis available from the author upon request. + indicates a factor increasing the impact of rising oil prices on GDP; ins = statistically insignificant at the 95% level - indicates a factor weakening the impact of oil price increases on GDP.

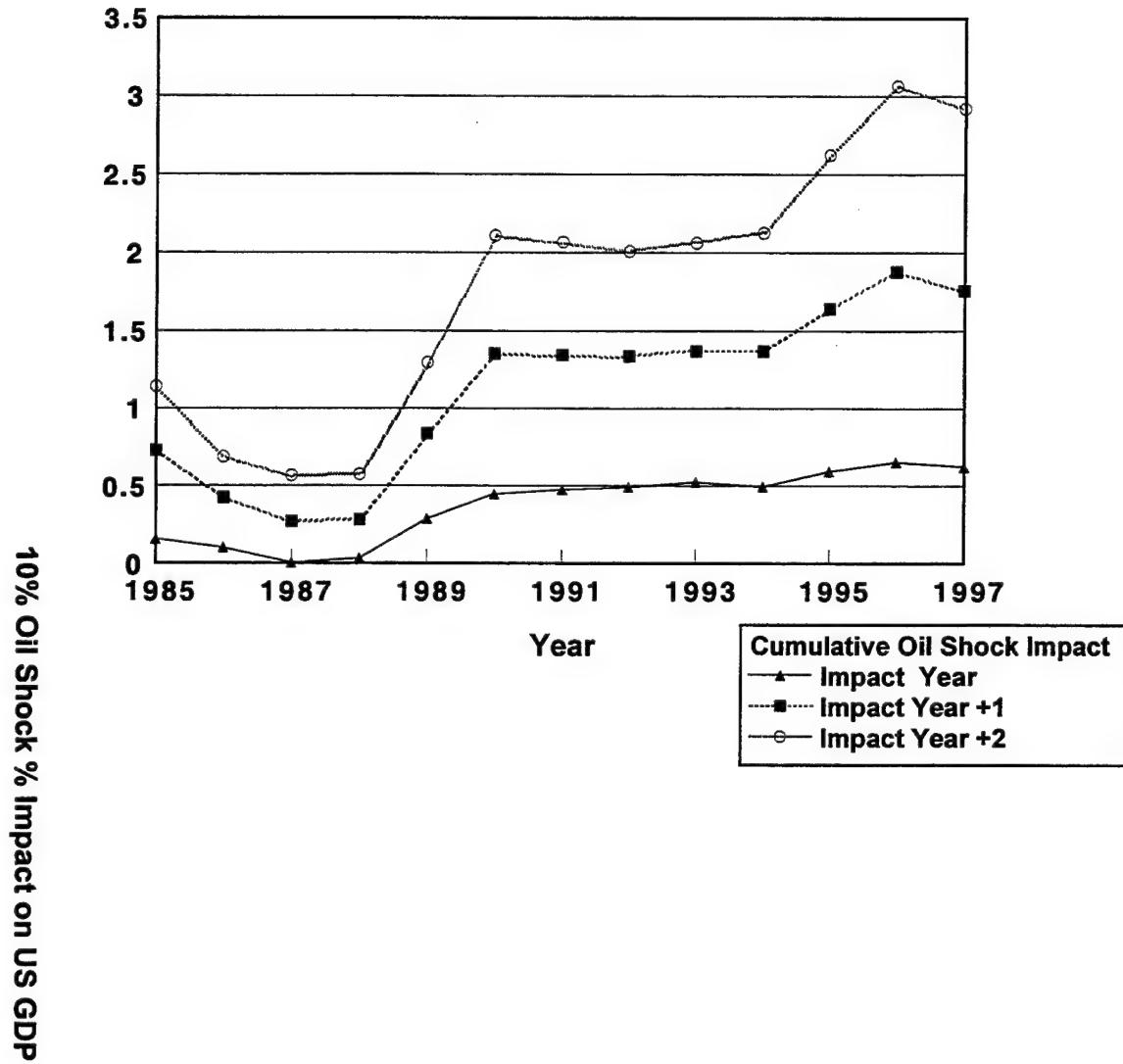
Figure 42

## Yearly Oil Shock Impact: US



**Figure 43**

## Cumulative Oil Shock Impact: United States



## **2.2 THE CATCH-UP COUNTRIES**

### **2.2.1 Mexico**

Mexico's economy has been shifting between Group 3 and Group 2 since Mexican officials began implementing a new development model in 1985. Rules known as the "Golden Straitjacket," implemented in large part to bring Mexico into NAFTA, have led to greater privatization and openness in the Mexican economy. Because Mexico is a major oil exporter, sudden oil price increases have tended to have a beneficial effect on its GDP. Globalization has not yet had an appreciable impact on these increases, but as the Mexican economy opens up to world markets, the positive effects of oil price shocks should diminish. In light of this trend, naval forward presence can be expected to have less of a dampening influence on Mexico's GDP.

#### ***2.2.1.1 Patterns of Globalization***

Starting around 1985, Mexico fundamentally changed its development model. Gone is the import-substitution industrialization model that had characterized the country since the 1930s. Mexico now has a more open economy in which state intervention is limited by a new legal and institutional framework. Under the new model, the tendency has been for the market to replace regulation, private ownership to replace public ownership, and competition, including that from foreign goods and investors, to replace protection.<sup>43</sup>

Mexico was classified as a Group 2, or "catch up" country, through most of this reform period, although it was placed in Group 3 (primary producer) in 1987, 1991, 1993, 1994, and 1995. Relative to Group 2 countries Mexico is considerably below the norm in the globalization dimensions of trade openness, general globalization, and financial flows (Table 31). The country also experienced a lower than group norm rate of global growth. In the 1990s, however, some of the country's attempts at market liberalization were beginning to take effect (Figure 44). In particular, there was a fairly dramatic increase in the trade openness and general globalization

dimensions. By contrast, highly volatile financial flows established no clear trend during this period.

The country's convergence toward Group 2 norms can in part be explained by the fact that since 1985 Mexico, like most members of this group, has tended to adopt a set of policies or rules known as the "Golden Straitjacket".<sup>44</sup> According to Thomas Friedman, to fit into the Golden Straitjacket a country must either adopt, or be seen as moving toward, the following golden rules:

- The private sector must become the primary engine of economic growth, inflation must be kept low and prices stable, state bureaucracy shrunk, and the budget brought as close to balance as possible, if not put in surplus;
- Tariffs on imported goods have to be lowered or eliminated, foreign investment freed of restrictions, quotas and domestic monopolies eliminated, and exports increased;
- State-owned industries and utilities must be privatized, capital markets deregulated, the currency made convertible, and domestic industries, stock and bond markets opened to direct foreign ownership and investment;
- The economy has to be deregulated to promote as much domestic competition as possible;
- Government corruption, subsidies and kickbacks should be eliminated to the extent possible;
- Banking and telecommunications systems must be opened to private ownership and competition;
- Citizens should have the freedom to choose from an array of competing pension options and foreign-run pension plans and mutual funds.

Mexico put these policy initiatives in place partly to conform to NAFTA guidelines and requirements for membership.

#### ***2.2.1.2 Globalization and Oil Price Shocks***

Since Mexico is a major oil producer and exporter, it is to be expected that oil price increases would have a positive impact on the economy. Analysis of the impact of the country's globalization patterns on the size of this GDP change identifies only a short run effect from globalization on the size of these shocks (Table 32). The

negative sign on the general globalization dimension of globalization is similar to that found for other Group 2 countries, while the negative sign on the openness dimension no doubt reflects more leakages into imports following trade liberalization.

The size of GDP change following a shock seems to have been fairly stable from the late 1980s onward (Figures 45, 46), with the only apparent trend being a lowering of the benefits in the impact year.

#### **2.2.1.3 *Implications for Naval Forward Presence***

Because Mexico is an oil exporting country, lower prices stemming from naval crisis response would not bring a direct benefit to the economy. If globalization of the Mexican economy continues toward converge with other Group 2 countries, however, increased openness and general globalization should reduce the increases in GDP following an oil price shock. Naval forward presence therefore would reduce the positive effect of oil price increases less and less over time. Finally, a more exhaustive examination of markets affected by naval forward presence might identify benefits to them in the form of lower prices for some of Mexico's major imports.

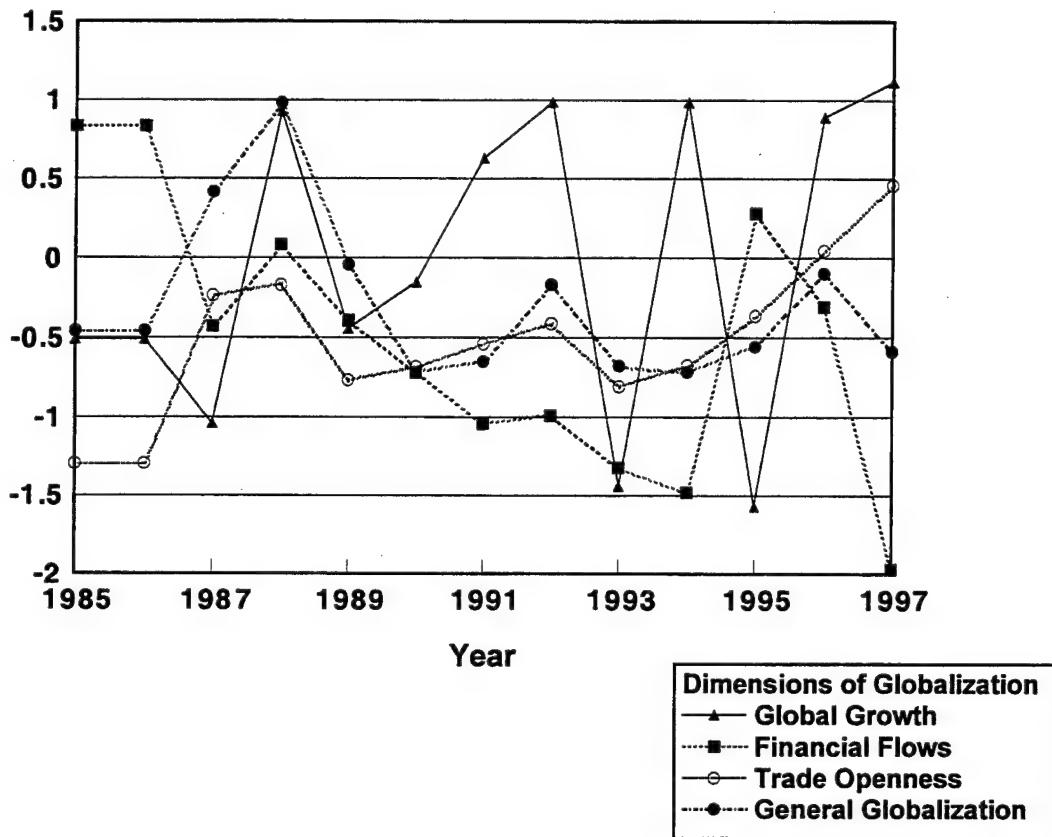
**Table 31****Dimensions of Globalization: Mexico 1988-1997**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Mexico	-0.171	-0.667	0.080	0.928
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Mexico	-0.766	-0.402	-0.392	2.131
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Mexico	-0.683	-0.549	-0.718	-0.153
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	France	-0.539	-0.650	-1.042	0.629
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Mexico	-0.412	-0.168	-0.991	0.985
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Mexico	-0.807	-0.676	-1.323	-1.441
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Mexico	-0.673	-0.715	-1.483	0.986
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Mexico	-0.364	-0.554	-0.281	-1.572
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706

1996	Mexico	0.045	-0.097	-0.306	0.889
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
1997	Mexico	0.480	-0.585	-1.270	1.114
	Group 1	-0.694	2.538	0.079	-0.159
	Group 2	0.461	0.028	-0.558	0.100
Average	Mexico	-0.324	-0.507	-0.831	0.056
	Group 1	-0.207	1.597	-0.072	-0.145
	Group 2	0.178	-0.077	-0.240	0.248

**Figure 44**

## **Patterns of Globalization: Mexico**



**Factor Scores: Globalization Dimensions**

**Table 32**  
**Summary Oil Shock Impact Analysis: Mexico**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	(-)	(-)	ins	ins
Impact Year + 1	ins	ins	ins	ins
Impact Year +2	ins	ins	ins	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	(-)	(-)	ins	ins
Impact Year + 1	ins	ins	ins	ins
Impact Year +2	ins	ins	ins	ins
<b><u>Yearly</u></b>				
Impact Year	(-)	(-)	ins	ins
Impact Year + 1	ins	ins	ins	ins
Impact Year +2	ins	ins	ins	ins

Notes: Group 2 country. Mexican data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

**Figure 45**

### **Yearly Oil Shock Impact: Mexico**

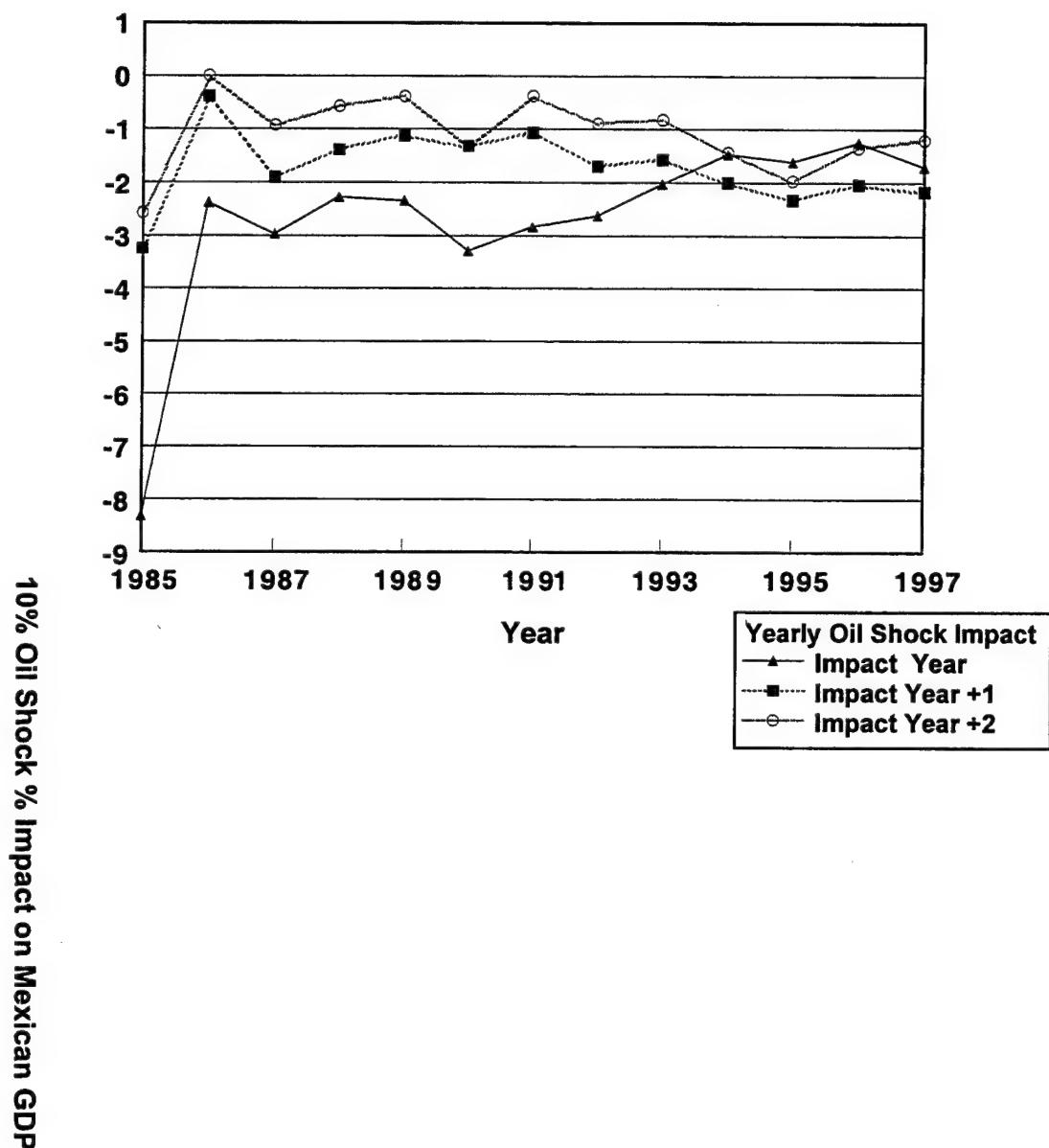
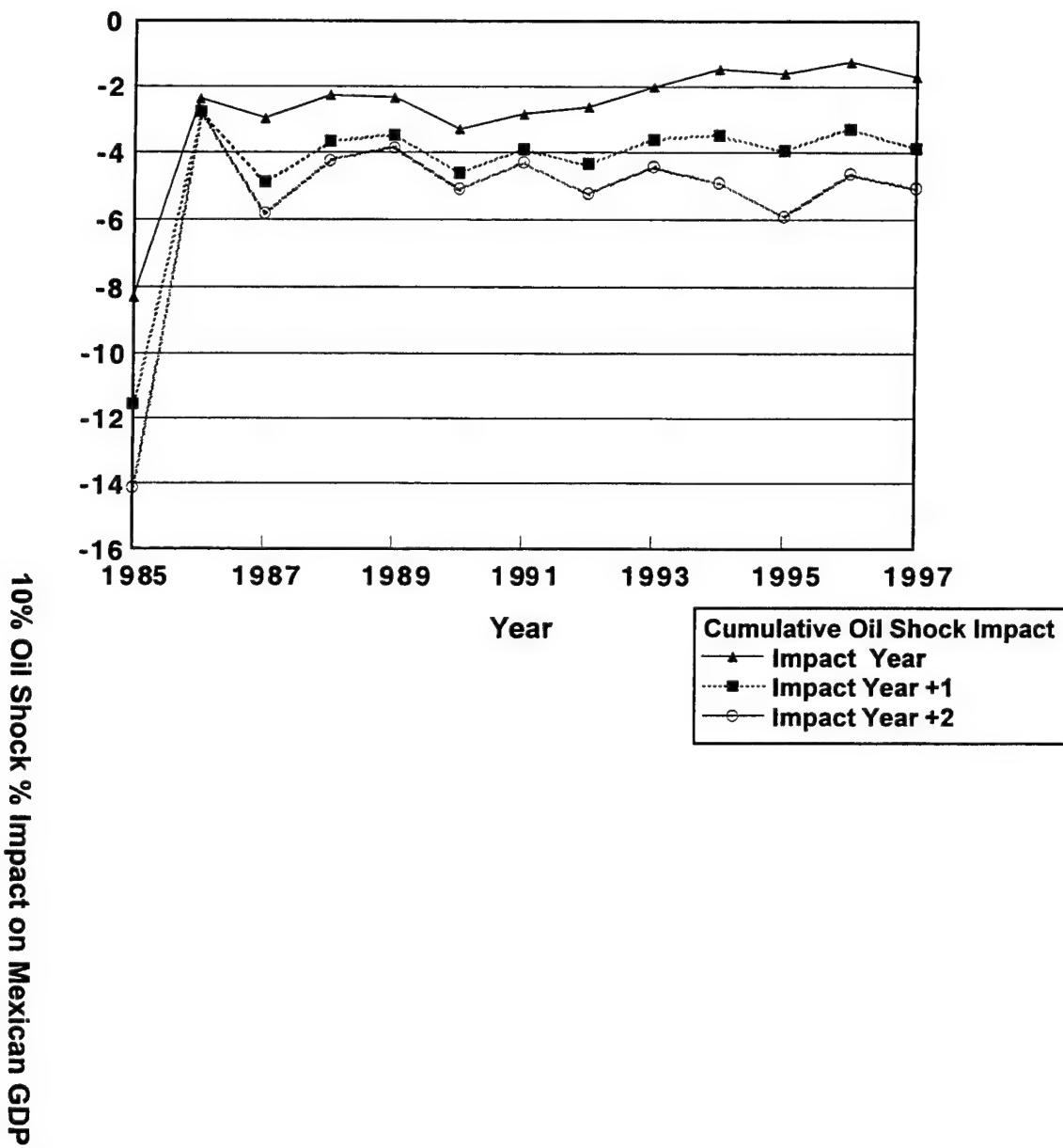


Figure 46

## Cumulative Oil Shock Impact: Mexico



## **2.2.2 The Philippines**

Since the fall of dictator Ferdinand Marcos from power in 1986, successive Philippines administrations have made efforts to improve the islands' economy through economic reforms aimed at increasing globalization and decreasing protectionism. The sporadic nature of these efforts led to a repeating boom-bust cycle exacerbated by external shocks and natural disasters. The Philippine economy wavered between Group 2 and Group 3 for the period under study as globalization progressed and faltered. Oil price shocks have tended to have a minor initial impact on the islands' economy, probably because of this pattern of cyclical boom and bust. Although naval forward presence will have only minor short term benefits in mitigating the effects of increased oil prices on the Philippine economy, in the long run it should prove highly beneficial.

### **2.2.2.1 Patterns of Globalization**

The Philippines received considerable attention in the early 1990s as it emerged from a long period of slow growth and economic imbalances, and again in 1997 when it managed to escape the Asian economic crisis relatively unscathed. The country provides an important example of the intertwining of growth strategy, macroeconomic imbalances, and globalization, and of the difficulties of separating these elements, all of which can affect the impact of oil shocks on a national economy.

Although the Philippines' economic growth averaged over 6 percent from 1975 through 1980, it was accompanied by a large buildup of external debt, much of which was used to fund an expansion of the public sector. Easy credit encouraged excessive borrowing by private firms, and protectionist industrial and trade policies caused investment to increase mainly in import-substitution and non-tradable activities, undermining competitiveness. A series of external shocks in the early 1980s (including the 1983-84 oil price shock, a jump in world interest rates, recession in industrialized countries and the Latin American debt crisis) exposed

these weaknesses. Compounded by domestic events, these shocks led to a major crisis characterized by default on external obligations, widespread failure of domestic banks and corporations, and a deep recession.<sup>45</sup>

Growth resumed in 1986 under a new government, but faltered again in 1990-91 in the wake of natural disasters (earthquake, drought and a major volcanic eruption), more external shocks, and renewed domestic instability. The setback was compounded by policy slippages, inducing a sharp widening of the fiscal deficit, lax monetary policy, and real currency appreciation, leading to a sharp increase in the current account deficit, a jump in inflation and a near balance of payments crisis in 1991. The repeat boom and bust cycle also reflected structural constraints including high import dependence and a shallow domestic capital market.

Although there was considerable instability after strongman Ferdinand Marcos fell from power, the Aquino government (1986-1992) initiated outward looking and market oriented reforms starting in 1986 that, although implemented only partially and not without setbacks, signaled a shift in policy direction on which the comprehensive reforms of the 1990s would build.

The 1990s witnessed impressive economic progress in the Philippines, reflecting sound economic policies in a more favorable external environment and under greater political stability. The government, led by President Fidel Ramos (1992-98), embraced a comprehensive reform strategy aimed at further opening up the economy, reducing macroeconomic imbalances, and addressing other structural rigidities. A number of important sectors, including banking, telecommunications, domestic shipping and the oil sector, were opened to competition, while some limits on foreign participation were liberalized. Quantitative import restrictions on commodities (except for rice) were removed and the average import tariff dropped to around 10 percent, one third the level of the mid-1980s.

These economic developments greatly influenced the country's pattern of globalization. For most of the years under study, the Philippines was classified as a Group 2 country by the factor/discriminant model. In 1991-1994 and 1997, however, it was placed in Group 3 (primary producer). In comparison to the norm for Group 2 countries, the Philippines was less open to trade (structural openness dimension), had a much lower level of general

globalization, and lagged in financial globalization, but experienced a higher rate of global expansion (Table 33).

Reflecting events and policy shifts, globalization in the Philippines appears to have been a cyclical process, making gains in the late 1980s only to retrogress in the early 1990s. The latter 1990s saw gains in trade openness and general globalization, but again retrogression in financial globalization (Figure 47).

### **2.2.2.2 Globalization and Oil Price Shocks**

Globalization has had a limited or at least short-run effect on the impact of oil price shocks on the Philippines' GDP. The country has the normal Group 2 pattern of a negative sign associated with increased levels of general globalization (Table 34), i.e., over time oil price shocks should have a weaker and weaker impact on the economy. This pattern is reinforced to a certain extent by the negative sign on the openness dimension, because freer trade may allow for goods imported at world prices to offset higher energy prices. These effects, however, appear only the initial shock year. Subsequent years may be influenced more by the financial dimension, which has tended to increase the GDP loss associated with oil price increases. The net effect of these diverging forces has been to reduce the size of GDP losses in the impact year and increase them in the two subsequent years (Figures 48 49).

### **2.2.2.3 Implications for Naval Forward Presence**

The lack of strong links between globalization and the consequences of oil price shocks in the Philippines may be due to the cyclical pattern characterizing the country's efforts at globalization. If this is the case, naval forward presence, while not having as significant a short run impact as in other parts of the world, would still play an important role in reducing the Philippines' longer run GDP losses following oil price shocks.

**Table 33**

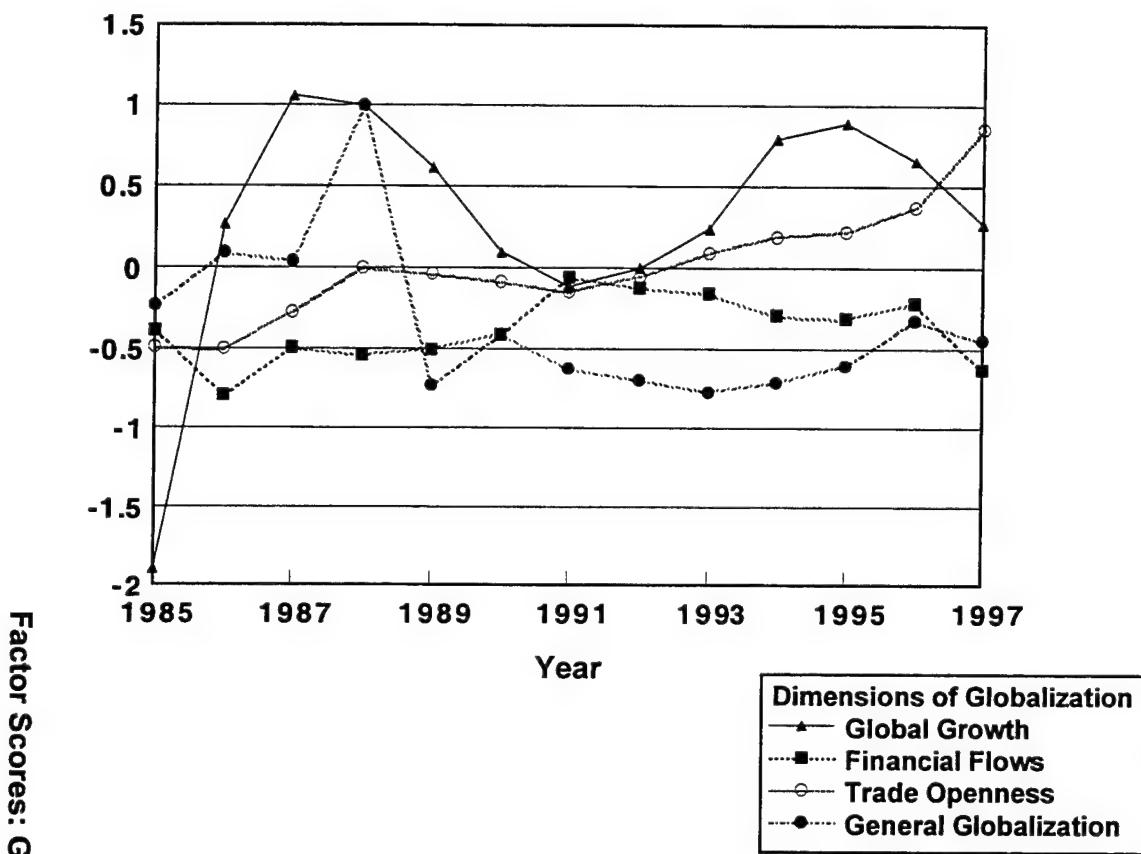
**Dimensions of Globalization: Philippines 1988-1997**

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Philippines	-0.001	-0.727	-0.543	0.997
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Philippines	-0.035	-0.730	-0.506	0.611
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Philippines	-0.085	-0.806	-0.411	0.096
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Philippines	-0.145	-0.623	-0.057	-0.118
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Philippines	-0.053	-0.695	-0.121	-0.004
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Philippines	0.091	-0.771	-0.153	0.239
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Philippines	0.189	-0.711	-0.290	0.788
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Philippines	0.221	-0.605	-0.311	0.887
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706

1996	Philippines	0.372	-0.323	-0.216	0.653
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
1997	Philippines	0.854	-0.445	-0.628	0.270
	Group 1	-0.694	2.538	0.079	-0.159
	Group 2	0.461	0.028	-0.558	0.100
Average	Philippines	0.141	-0.644	-0.324	0.442
	Group 1	-0.207	1.597	-0.072	-0.145
	Group 2	0.178	-0.077	-0.240	0.248

**Figure 47**

## **Patterns of Globalization: Philippines**



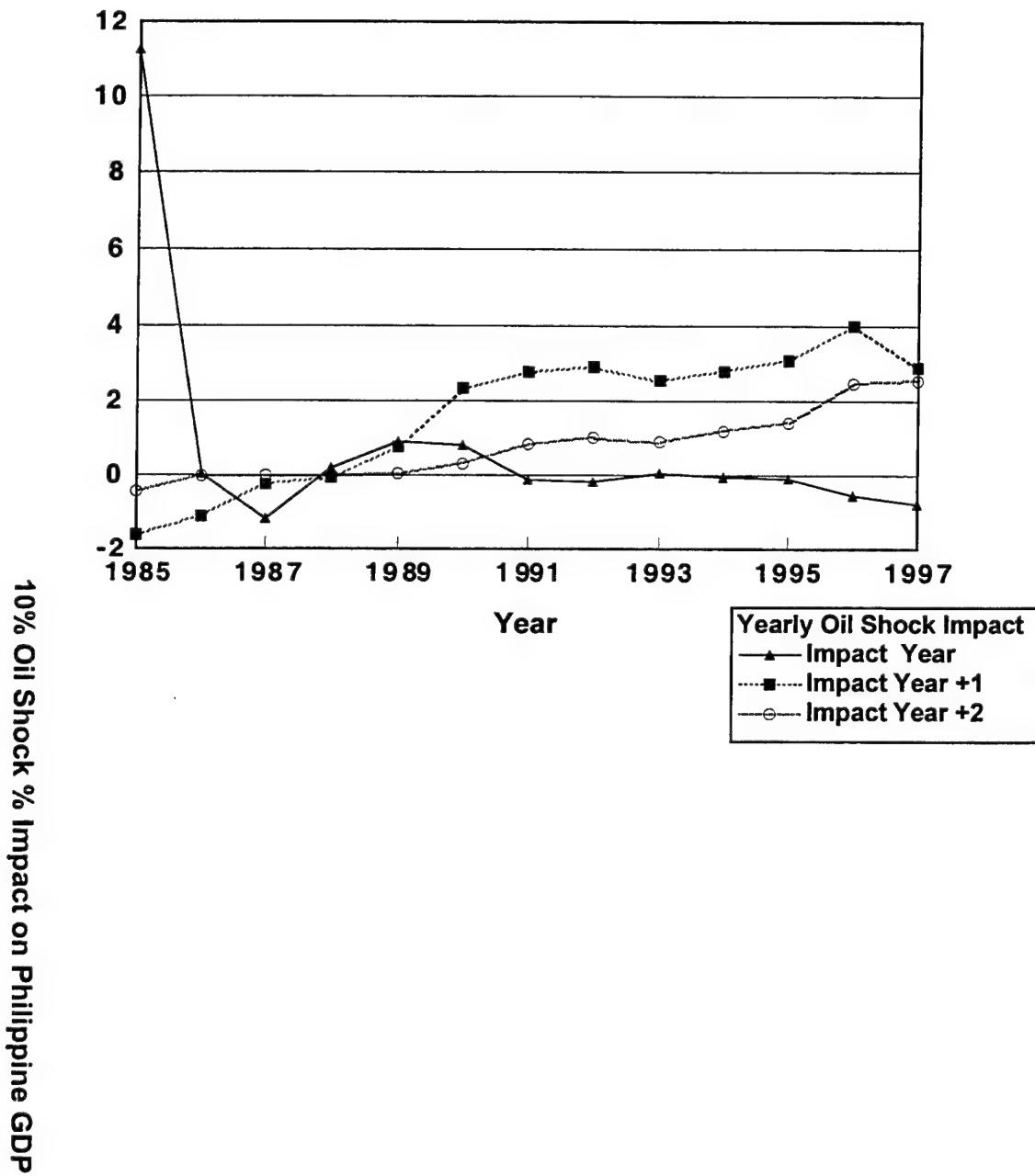
**Table 34**  
**Summary Oil Shock Impact Analysis: Philippines**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	(-)	(-)	ins	ins
Impact Year + 1	ins	ins	ins	ins
Impact Year +2	ins	ins	+	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	(-)	ins	ins	ins
Impact Year + 1	ins	ins	+	ins
Impact Year +2	ins	ins	+	ins
<b><u>Yearly</u></b>				
Impact Year	(-)	(-)	ins	ins
Impact Year + 1	ins	ins	ins	ins
Impact Year +2	ins	ins	ins	ins

Notes: Group 2 country. Philippine data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

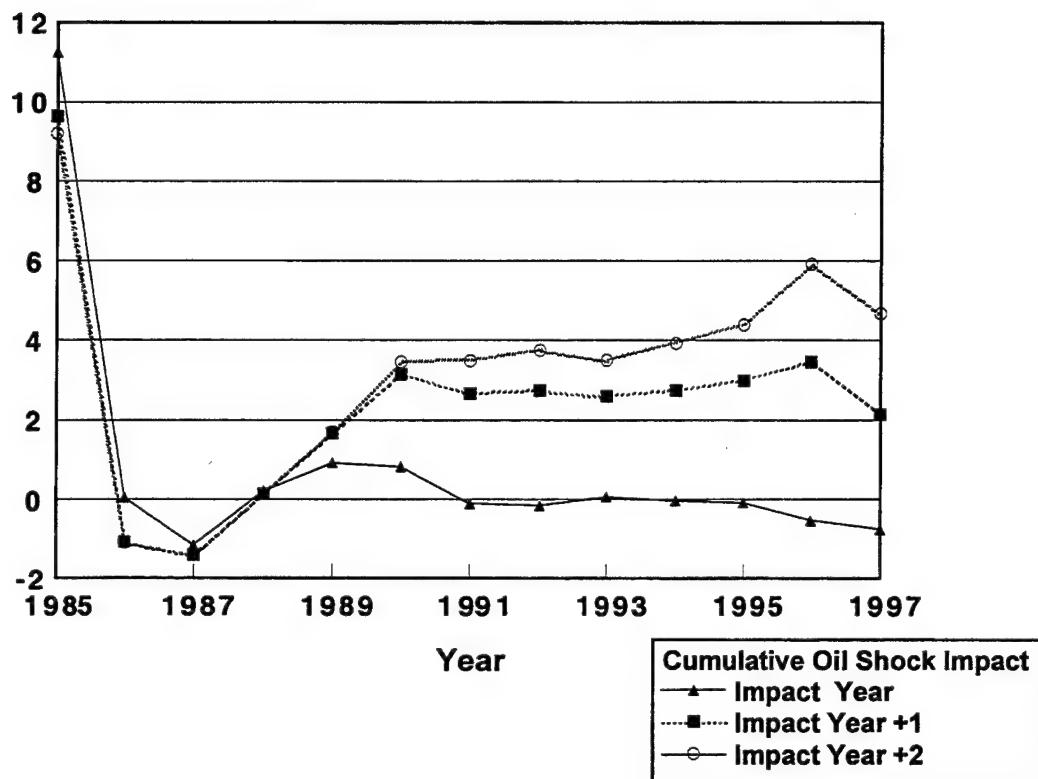
**Figure 48**

## **Yearly Oil Shock Impact: Philippines**



**Figure 49**

## Cumulative Oil Shock Impact: Philippines



10% Oil Shock % Impact on Philippine GDP

### **2.2.3 Portugal**

Portugal is a Group 2 country that has benefited greatly from membership in the EU. While its low labor costs were an enticement to FDI, Portugal has found itself losing market share to the newly independent countries of Central and Eastern Europe, which are located nearer to major markets or transportation routes. EU structural investments have made a significant contribution to Portugal's development, while increased trade with Europe has helped its leaders open the economy to globalization. Oil price shocks have not had a major impact on Portugal's GDP, and naval forward presence will not bring large benefits for the near term.

#### **2.2.3.1 *Patterns of Globalization***

Portugal, like its European neighbors, has developed an increasingly service-based economy over the past 25 years. Agriculture and fishing accounted for just 3.8 percent of GDP in 2000, down from 24% in 1960. The primary sector still accounted for 12.5% of employment in 2000, however, well above the EU average. This statistic reflects the low productivity of the agricultural sector.

The Portuguese economy also has markedly lower labor costs compared to mainstream EU economies. Low labor costs combined with unrestricted access to the EU market attracted substantial foreign investment in new Portuguese manufacturing projects, particularly in the automotive and electronics sectors. FDI, however, has slowed as alternative low-cost manufacturing operations in Central and Eastern Europe—often better placed geographically to supply the main European markets, and themselves front-runner candidates for EU membership—became increasingly appealing to foreign investors. Portugal can therefore no longer afford to rely solely on low wages to attract further investment.

Acceptance into the EC has brought about considerable change in the Portuguese economy. Ever since it joined the Community in 1986, Portugal has qualified for structural funds from Brussels. These funds constituted more than 3% of Portugal's GDP during most of the 1990s, and added up to more than 4 trillion escudos.

A second effect of tying itself to Europe has been to make Portugal more open to trade and investment, especially from other European countries. The long process began with membership in the European Free Trade Area and a trade deal with the then European Economic Community in 1972. Between 1975 and 1985, exports as a percentage of GDP rose from 20% to 33 % and imports from 33% to 40%, but the figures have changed little since then. Portuguese trade did become more oriented towards the country's new European partners after 1985. Also, foreign direct investment surged after Portugal joined the EC. The stock of FDI in Portugal more than doubled between 1985 and 1990, and more than doubled again by 1999.

Portugal was classified as a Group 2 country by the factor/discriminant analysis. The comprehensive data needed for the generation of factor scores/globalization dimensions, however, does not exist for Portugal over the entire 1985-97 period. The data that is available for the 1988-95 period shows that relative to other Group 2 countries, Portugal has a greater degree of openness to trade, a much higher level of attainment of general globalization, and greater financial globalization. Its global growth dimension, by contrast, is slightly lower (Table 35).

Despite the gains made in opening its economy, Portugal's openness dimension has declined more or less steadily since 1990. Despite this, significant improvements have occurred with regard to the general globalization and financial dimensions (Figure 50).

### **2.2.3.2 Globalization and Oil Price Shocks**

Portugal fits the normal Group 2 pattern of showing a negative sign associated with increased levels of general globalization: Over time, oil price shocks should have a weaker and weaker impact on the economy (Table 36). This pattern is reinforced to a certain extent by the negative sign on the global growth dimension, meaning that continued rapid economic growth should also reduce the loss in income typically associated with an oil price shock. On the other hand, these globalization dimensions may have a relatively weak effect on the loss in GDP associated with oil price increases. From about 1987 on, there has been little change in the loss to Portugal's GDP associated with increased oil prices (Figures 51, 52). It should be noted, however, that due to the limited data

available for Portugal, the oil shock impact analysis was carried out using the average globalization scores for Group 2 countries, rather than those specific to Portugal.

#### ***2.2.3.3 Implications for Naval Forward Presence***

Under Portugal's circumstances, the benefits associated with naval forward presence, while still positive, will be considerably lower than would be the case for a typical Group 1 country. This is a result of the fact that Portugal's general globalization dimension remains too insignificant to have increased the loss in GDP associated with higher oil prices.

**Table 35****Dimensions of Globalization: Portugal 1988-1995**

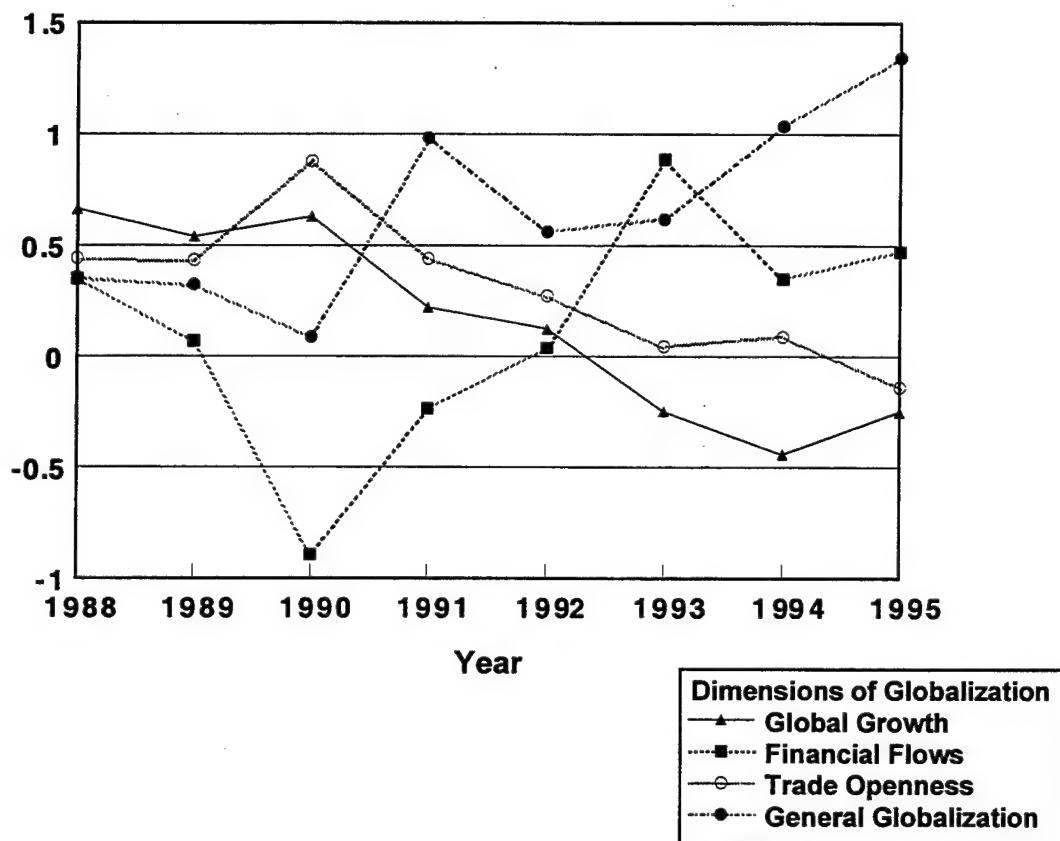
Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Portugal	0.445	0.360	0.353	0.663
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Portugal	0.436	0.327	0.072	0.539
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Portugal	0.879	0.089	-0.892	0.630
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Portugal	0.443	0.983	-0.237	0.223
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Portugal	0.277	0.563	0.040	0.126
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Portugal	0.047	0.618	0.887	-0.249
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Portugal	0.091	1.036	0.353	-0.444
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Portugal	-0.138	1.345	0.474	-0.251
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706

Average	Portugal	0.310	0.665	0.131	0.155
	Group 1	-0.131	1.463	-0.070	-0.148
	Group 2	0.145	-0.096	-0.187	0.280

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**Figure 50**

## **Patterns of Globalization: Portugal**



**Factor Scores: Globalization Dimensions**

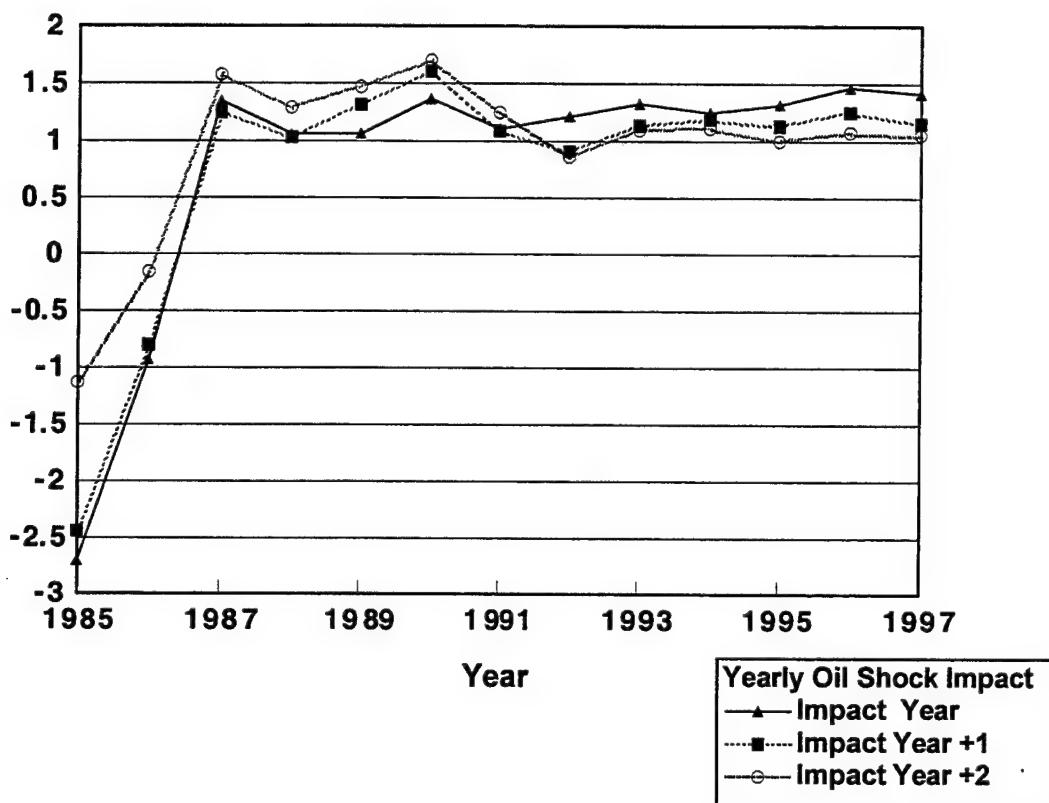
**Table 36**  
**Summary Oil Shock Impact Analysis: Portugal**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	(-)	ins	ins	ins
Impact Year + 1	(-)	ins	ins	(-)
Impact Year +2	(-)	ins	ins	(-)
<b><u>Cumulative % GDP</u></b>				
Impact Year	(-)	ins	ins	ins
Impact Year + 1	(-)	ins	ins	(-)
Impact Year +2	(-)	ins	ins	(-)
<b><u>Yearly</u></b>				
Impact Year	(-)	ins	ins	ins
Impact Year + 1	ins	ins	ins	(-)
Impact Year +2	ins	ins	ins	ins

Notes: Group 2 Country. Group 2 data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

**Figure 51**

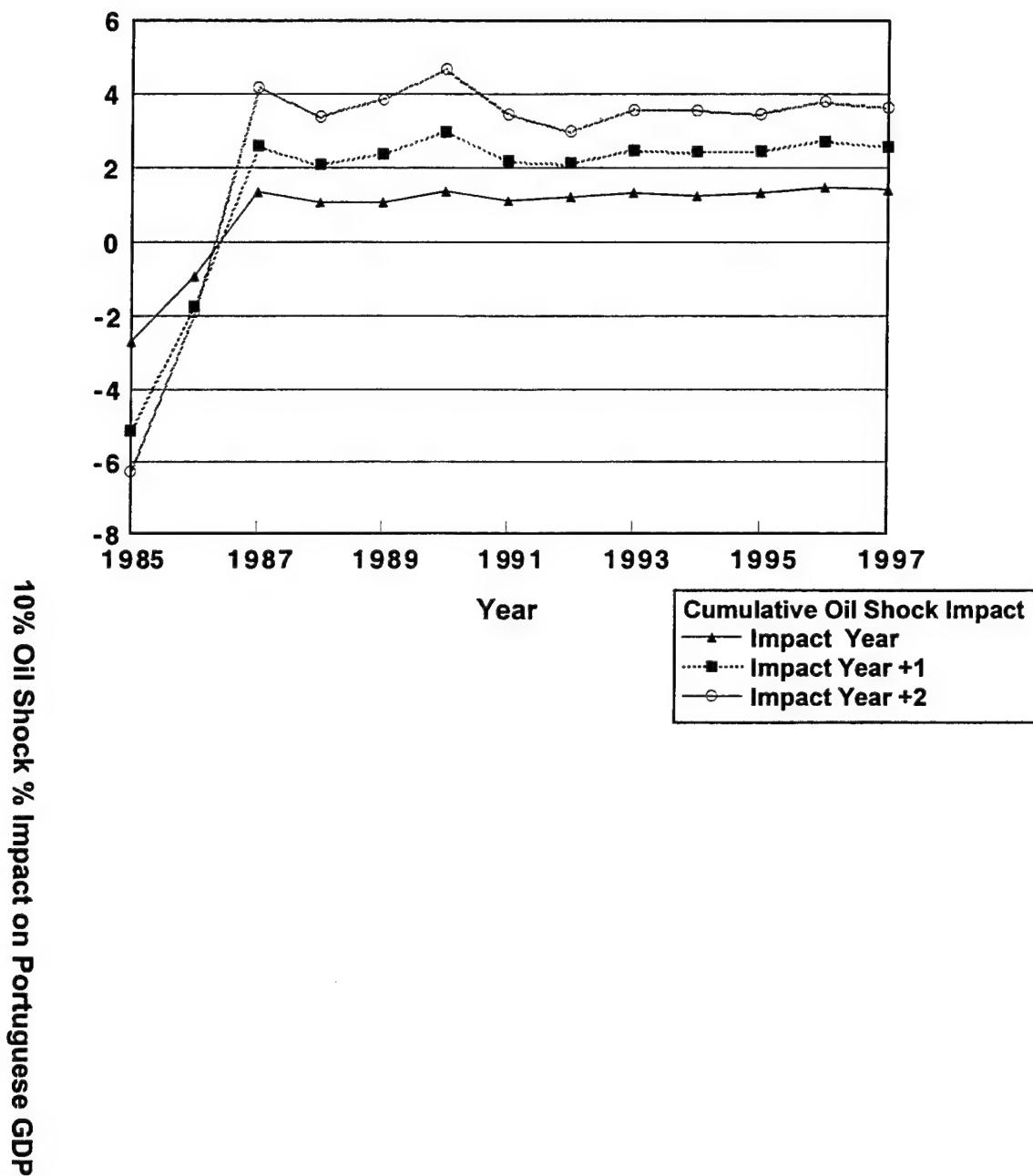
### **Yearly Oil Shock Impact: Portugal**



**10% Oil Shock % Impact on Portuguese GDP**

**Figure 52**

## Cumulative Oil Shock Impact: Portugal



## **2.2.4 Republic of Korea (South Korea)**

While no stranger to world trade, Group 2 member South Korea protected its domestic markets and export firms through an informal system of “crony capitalism.” Only in 1994 did President Kim Young Sam introduce major, society-wide globalization reforms intended to bring South Korea’s economy in line with those of the industrialized West. Although these reforms were successful in increasing South Korea’s globalization indices, they may have been a major contributing factor in the Asian financial crisis of 1997. Globalization also has increased South Korea’s potential vulnerability to oil price shocks, making the country a likely beneficiary of naval forward presence.

### **2.2.4.1 Patterns of Globalization**

To discuss South Korea’s globalization experience, it is necessary to delve into the factors underlying the Asian financial crisis that hit the economies of the entire region in August 1997.

Globalization is not new to South Korea (Figure 53), although the word has only come into vogue following the reforms of 1994 (discussed below). South Korea was listed in the Endogenous Growth (Group 1) category by Sachs. The factor/discriminate analysis undertaken here, however, placed it consistently in Group 2 (“catching-up”). Relative to other Group 2 countries (Table 37), South Korea: (a) Is less open to international trade (but more open than Group 1 countries); (b) has attained a higher degree of general globalization (although considerably below that of Group 1 members); (c) shows a lower level of financial globalization than Group 2 norms; and (d) has a higher rate of global growth than Group 2 as a whole.

South Korea has been engaged in global competition ever since it adopted an outward-oriented development strategy in the 1960s. It successfully exported many of its manufactured products all over the world; in fact its rapid economic growth was associated with its rapid export expansion. South Korea’s participation in global competition, however, was limited to several major *chaebols* (trading companies), while most of its domestic markets and informal institutions were for many years insulated from the pressure of global competition.

The end of the Cold War greatly changed the manner in which the South Korean economy interfaced with the world economy.<sup>46</sup> During the Cold War, the U.S. foreign policy goal of containing communism in Europe and Asia led to a “free-rider” problem in the area of international trade. Throughout East Asia, but in South Korea in particular, states were protected by the American nuclear umbrella and prospered through export-led growth strategies based on open U.S. markets. With the end of the Cold War, however, incentives for the United States to seek military alliance benefits in exchange for trade concessions disappeared. Changed global relationships meant new realities for the South Korean government to deal with.

One implication of the new world order for South Korea was that the government could no longer maintain the kind of production autonomy and capacity established by the Japanese prototype of the 1960s. A plethora of international organizations and multi-national corporations has come to regulate, shape, and to some extent determine the industrial policies these states can formulate in competition with domestic constituents. In short, the integration of financial, information, and trade networks shifts power from governments to markets. As a result, the globalization forces that push for increasing transparency in financial interactions would not allow for the kind of crony capitalism previously embraced by the South Korean government.

In what has come to be known as the Sydney Declaration, President Kim Young Sam faced this reality in November 1994 by articulating a new national goal for South Korea: Globalization. The South Korean term for globalization is *segye hwa*, a term that incorporates all segments of society, including politics, economics, culture and the arts, education and mass communication. Its purpose was not to copy foreign models, but to raise South Korean standards in all these areas to the levels of the world's advanced economies.<sup>47</sup>

It is still controversial whether the 1994 shift in South Korea's globalization strategy indirectly caused the 1997 financial crisis, or whether that crisis reflected more long-standing structural weaknesses. South Korea's financial flows, trade openness and general globalization all increased relative to other countries in the post-1994 period. The extent to which the reforms required fundamental changes in South Korea's formal as well as informal

institutions is also debated at length in the literature. More agreement exists on the direct causes of the crisis. These are usually classified in terms of three major factors: (1) the decline in export competitiveness; (2) the imbalance between short-term debt and foreign exchange reserves; and (3) structural problems arising from an unregulated banking sector and the economy's dependence on the *chaebols* (see Figure 54).<sup>48</sup>

#### **2.2.4.2 Globalization and Oil Price Shocks**

An assessment of globalization's role in mitigating the effects of oil price shocks on the South Korean economy found that increased general globalization tended to reduce the magnitude of lost GDP attributable to an oil price shock (Table 38). This pattern is common to the other Group 2 countries in our sample. By contrast, increased integration into world markets—the openness dimension—has tended to increase the severity of oil price shocks. The same also is true of increases in the financial dimension, although this does not appear to be a factor for South Korea during the actual shock year.

Finally, there is some evidence that increased global growth tends to suppress the loss in GDP associated with oil price shocks. The global growth effect is not present for South Korea across both measures of the oil price shocks, suggesting that it has not had a major effect on the magnitude of change in South Korea's GDP due to oil price shocks. After increasing rapidly from 1985-1991, the amount of lost GDP associated with oil price shocks varied only slightly after that period, and stabilized after 1994 (Figures 55, 56).

#### **2.2.4.3 Implications for Naval Forward Presence**

As a condition for IMF loans, South Korea's leaders are proceeding with financial and trade liberalization. Since both of these factors are associated with increased severity of oil price shocks, it is fairly safe to say that South Korea may suffer greater lost income during periods of rapid increases in oil prices. If this is the case, naval forward presence, by suppressing oil price increases during periods of crisis, will play an increasingly important role in stabilizing South Korea's economy.

Table 37

## Dimensions of Globalization: Korea 1988-1996

Year		Structural Openness	General Globalization	Financial Globalization	Global Growth
1988	Korea	0.087	-0.191	-1.121	1.104
	Group 1	-0.190	1.166	-0.081	0.116
	Group 2	0.112	-0.290	-0.080	0.690
1989	Korea	0.100	-0.408	-0.845	0.473
	Group 1	0.004	1.669	-0.119	-0.103
	Group 2	-0.056	-0.292	-0.102	0.148
1990	Korea	-0.048	-0.460	-0.856	0.276
	Group 1	-0.024	1.387	-0.722	-0.109
	Group 2	-0.027	-0.481	-0.600	0.037
1991	Korea	-0.250	0.244	-0.194	1.178
	Group 1	-0.066	1.423	-0.200	-0.208
	Group 2	0.069	0.161	0.116	0.132
1992	Korea	-0.044	0.204	-0.591	0.324
	Group 1	-0.142	1.504	-0.067	-0.269
	Group 2	0.257	0.043	-0.182	0.306
1993	Korea	-0.288	0.016	0.803	-0.251
	Group 1	-0.180	1.399	0.407	-0.182
	Group 2	0.381	0.102	-0.285	0.074
1994	Korea	-0.463	0.051	0.332	0.774
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	Korea	-0.286	0.063	-0.384	1.431
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706

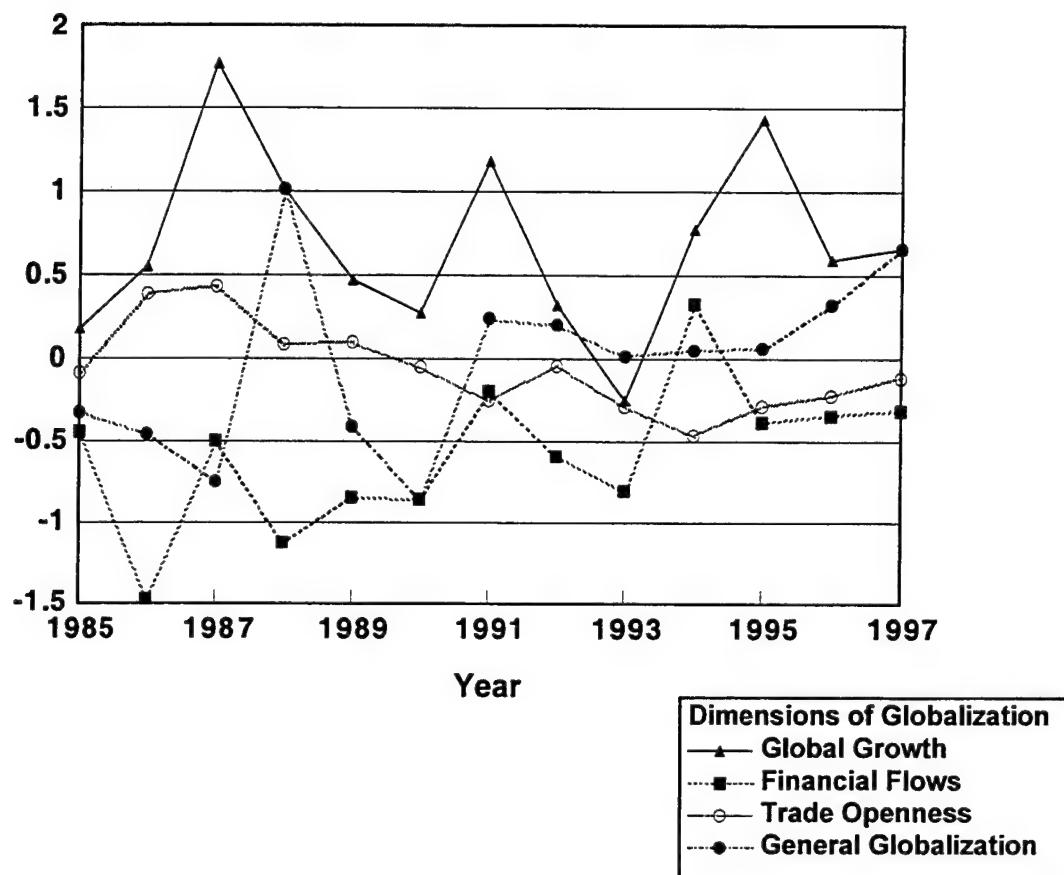
1996	Korea	-0.222	0.325	-0.344	0.593
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
1997	Korea	-0.116	0.658	-0.313	-0.044
	Group 1	-0.694	2.538	0.079	-0.159
	Group 2	0.461	0.028	-0.558	0.100
Average	Korea	-0.153	0.050	-0.351	0.586
	Group 1	-0.207	1.597	-0.072	-0.145
	Group 2	0.178	-0.077	-0.240	0.248

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**Figure 53**

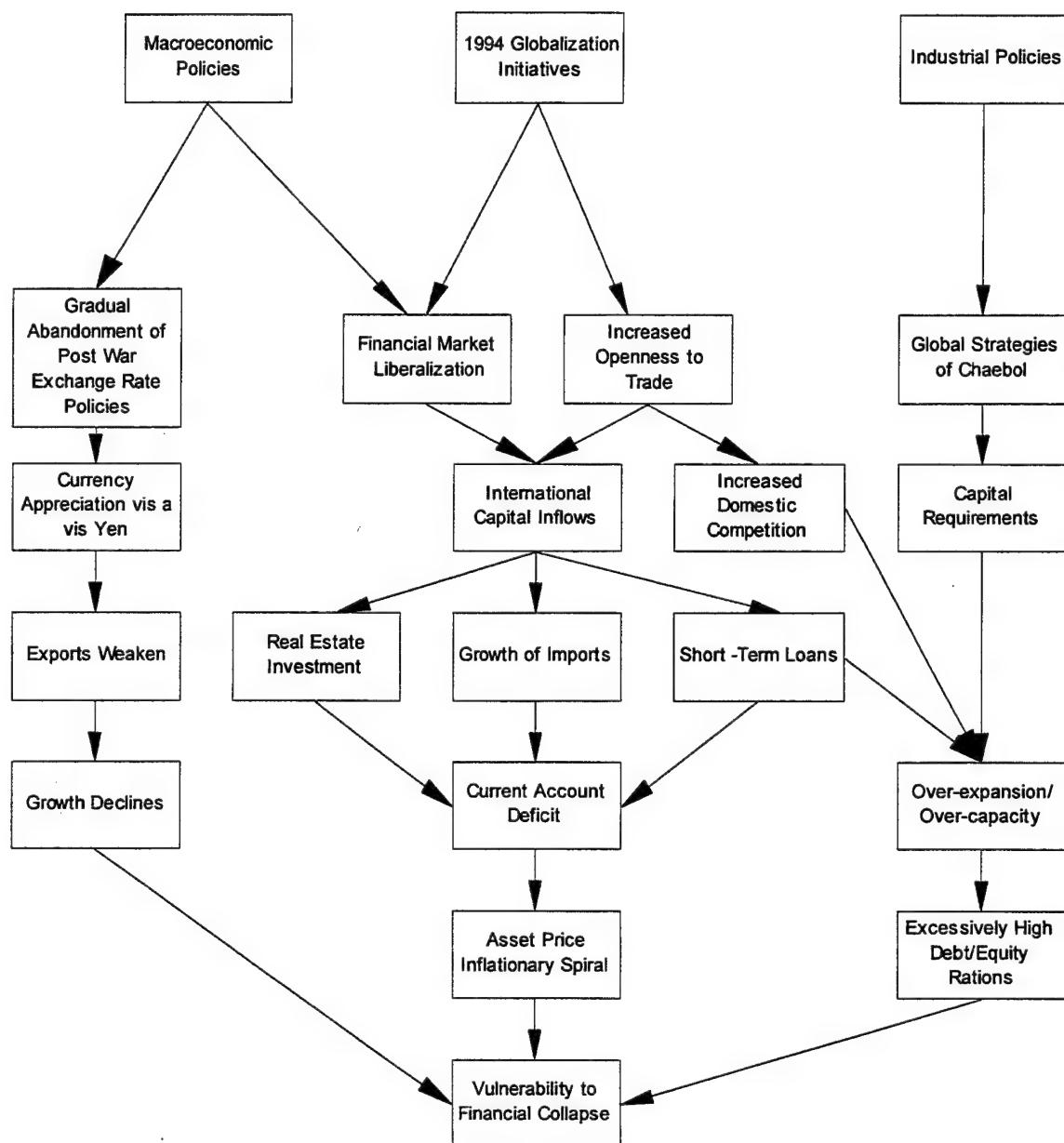
### **Patterns of Globalization: Korea**

**Factor Scores: Globalization Dimensions**



**Figure 54**

**South Korean Crisis of 1997:  
Globalization, Macroeconomic and Industrial Policy  
Linkages<sup>49</sup>**



**Table 38**

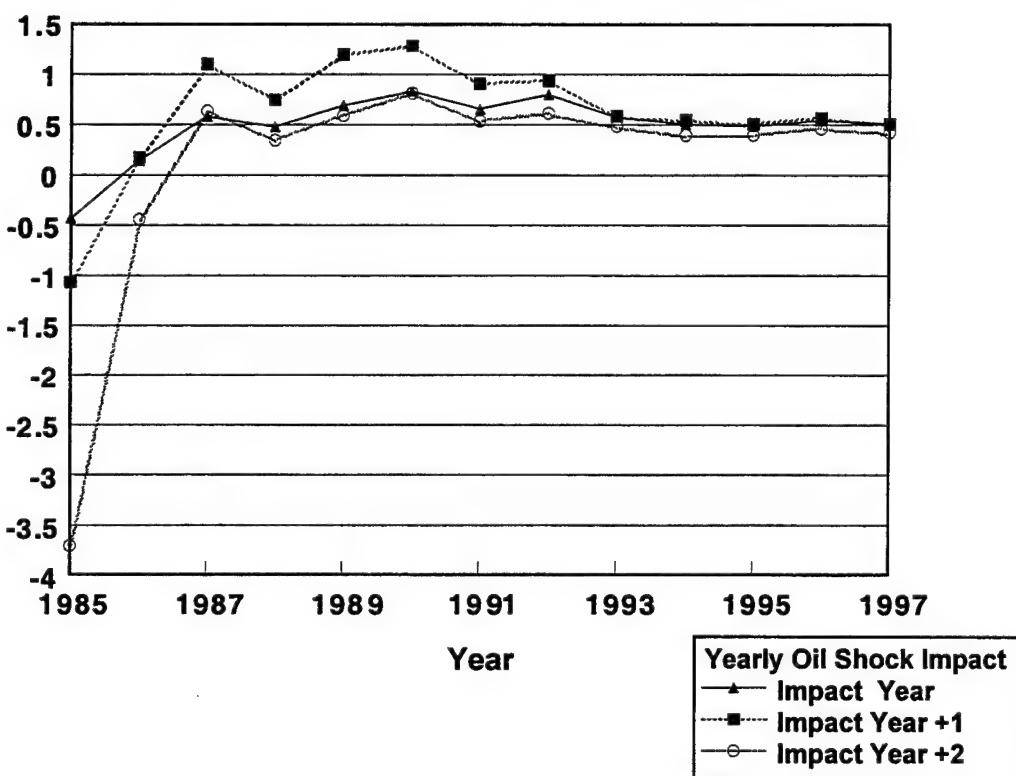
**Summary Oil Shock Impact Analysis: South Korea**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b><u>Cumulative</u></b>				
Impact Year	(-)	+	ins	ins
Impact Year + 1	(-)	+	+	ins
Impact Year +2	(-)	+	+	ins
<b><u>Cumulative % GDP</u></b>				
Impact Year	(-)	+	+	(-)
Impact Year + 1	(-)	+	+	(-)
Impact Year +2	(-)	+	+	ins
<b><u>Yearly</u></b>				
Impact Year	(-)	+	ins	ins
Impact Year + 1	(-)	+	+	ins
Impact Year +2	(-)	+	+	(-)

Notes: Group 2 country. South Korean data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

**Figure 55**

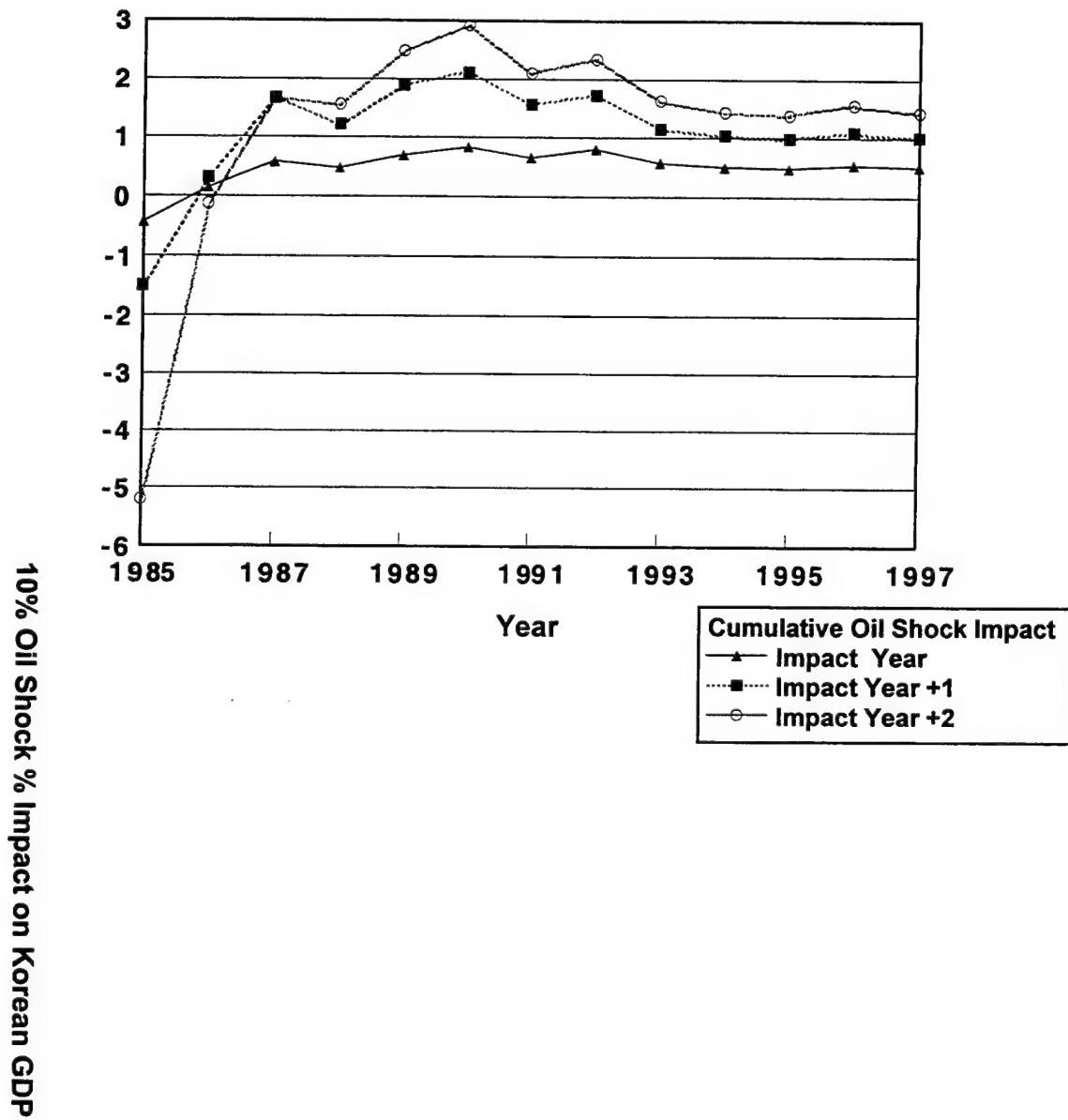
### **Yearly Oil Shock Impact: Korea**



10% Oil Shock % Impact on Korean GDP

**Figure 56**

### **Cumulative Oil Shock Impact: Korea**



## 2.2.5 South Africa

Until 1983, South Africa's Group 2 economy was highly protected and export-focused. Around 1983, however, policymakers in Pretoria began to liberalize the import regime by shifting their focus from those goods that *would* be allowed into the country to which goods would be prohibited. International trade sanctions imposed against the apartheid government of South Africa beginning in 1985 disrupted South Africa's balance of trade, but did not reverse the trend of slow trade growth. Growth nevertheless remained weak until the sanctions began to be lifted in 1991. Limited data for the study period indicate that South Africa will not benefit greatly from naval forward presence until its economy approaches more closely the norm for Group 2 global growth dimensions.

### 2.2.5.1 Patterns of Globalization

During the 1960s and 1970s, South Africa's trade was characterized by high tariffs and extensive import controls.<sup>50</sup> In response to the perception that the possibilities for growth through import substitution were being exhausted, and in the wake of declining manufacturing and trade, policymakers attempted to mitigate the anti-export bias of the system. They focused on export promotion measures, however, rather than on liberalization of the import regime. It was only in 1983 (at which time about 77 percent of imports were subject to direct import controls) that the first systematic attempt was made to dismantle the controls. In 1985, South Africa switched from listing only *permitted* imports to listing only *prohibited* imports; the latter amounted to 23 percent of all imports.

In 1985, the imposition of international financial sanctions against South Africa's apartheid regime resulted in balance of payments pressures that halted and even reversed progress on trade liberalization. By the end of the 1980s, South Africa had the most tariff lines (more than 13,000), most tariff rates (200 ad valorem equivalent rates), the widest range of tariffs, and the second highest level of dispersion among developing countries. In sum, South

Africa ended up with a highly distorted system of protection as a direct result of trade sanctions.

The impetus for liberalization started gaining momentum once again in the early 1990s, when the country adopted a two-pronged approach to trade liberalization as a result of the sanctions being lifted and the election of a new government. This approach consisted of: (1) multilateral trade liberalization in the context of the Uruguay Round of trade negotiations; and (2) unilateral trade liberalization.

As a result of these changes, South Africa's trade regime has been liberalized considerably. Virtually all quantitative restrictions have been eliminated. The tariff regime has been rationalized, with the number of lines reduced from over 13,000 in 1990 to about 7,900 in 1998.

The imposition of trade and financial sanctions on South Africa in the 1980s had an enormous economic impact. While capital flight from South Africa dates back to the early 1960s, in the mid-1980s a number of Western banks, under pressure at home to end support of the racist government in Pretoria, precipitated more concerted action by creditors when they indicated that they would not be rolling over loans to South Africa. Financial sanctions forced South Africa to move from running current account deficits in the early 1980s of over 5 percent of GDP to running current account surpluses until the early 1990s. The impact on trade volumes, however, may not have been as significant as often believed. Imports actually grew somewhat during the late 1980s (although they accelerated sharply after the removal of sanctions). Likewise, exports increased slowly under sanctions, and picked up strongly in the 1990s.

In comparison with other Group 2 countries over the 1994-97 period, South Africa is still considerably more closed than the norm for this group, despite gains in trade liberalization. South Africa has a slighter greater level of general globalization and financial globalization than the group norm, but has experienced a lower global growth dimension (Table 39).

#### ***2.2.5.2 Globalization and Oil Price Shocks***

Like other Group 2 countries, South Africa has a negative sign associated with increased levels of general globalization, i.e., over

time oil price shocks should have a weaker impact on the economy (Table 40). This pattern is offset to a certain extent by the positive sign on the financial dimension (year of impact) and the growth dimension (year following impact). These mean that increased capital flows and higher growth of trade may create domestic bottlenecks or shortages, resulting in sharp price increases following an oil price shock. In turn, these price increases may result in an overall decline in demand, thus reducing GDP.

These results should be taken as very tentative, however, because the analysis relies on the globalization dimensions for Group 2 as a whole (the norm) rather than that for South Africa. Group 2 dimensions combined with South African oil price shocks demonstrate a slight increase over time in the strength of oil price shocks (Figures 57, 58), suggesting that in the net the financial and growth dimensions of globalization have offset the dampening effect of the general globalization dimension.

#### ***2.2.5.3 Implications for Naval Forward Presence***

As with most Group 2 countries, naval forward presence is likely to produce considerably less economic benefit for South Africa than that accrued by the Group 1 countries. If South Africa's economy converges with Group 2 norms over time, however, this benefit will most likely become positive and stronger.

**Table 39****Dimensions of Globalization: South Africa 1988-1996**

Year		Structural	General	Financial	Global
		Openness	Globalization	Globalization	Growth
1994	SA	-0.853	0.183	0.722	-0.180
	Group 1	-0.156	1.541	0.244	-0.223
	Group 2	0.325	0.110	-0.071	0.146
1995	SA	-0.497	0.006	-0.613	0.285
	Group 1	-0.294	1.618	-0.023	-0.208
	Group 2	0.096	-0.117	-0.294	0.706
1996	SA	-0.189	-0.455	-0.942	0.119
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.159	-0.034	-0.341	0.140
1997	SA	-0.562	0.404	-0.179	-0.544
	Group 1	-0.326	1.724	-0.239	-0.106
	Group 2	0.461	0.028	-0.558	0.100
Average	SA	-0.525	0.035	-0.253	-0.080
	Group 1	-0.276	1.652	-0.064	-0.161
	Group 2	0.260	-0.003	-0.316	0.273

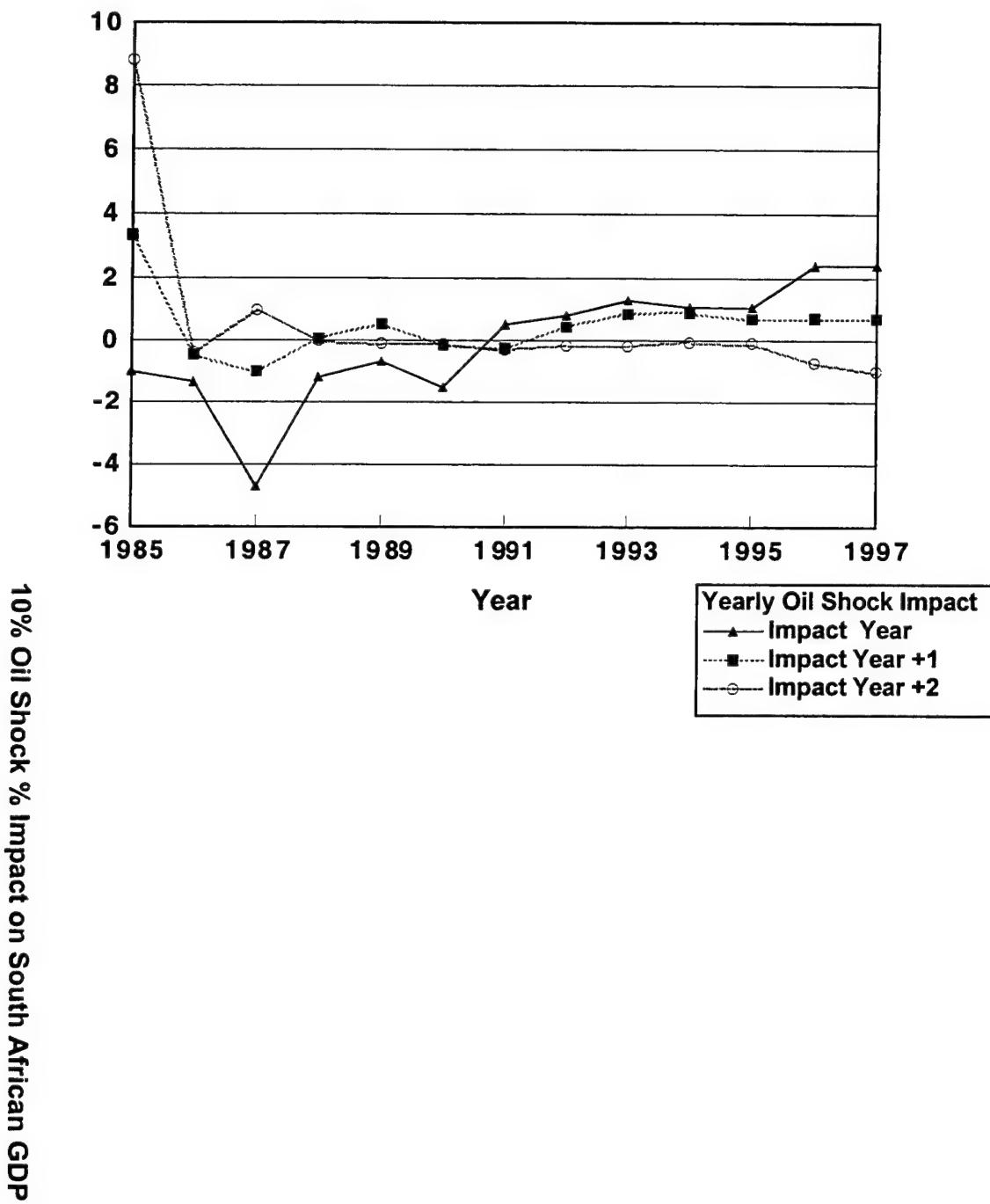
**Table 40****Summary Oil Shock Impact Analysis: South Africa**

Period of Impact	Globalization Dimensions			
	General Globalization	Structural Openness	Financial Globalization	Global Growth
<b>Cumulative</b>				
Impact Year	(-)	ins	+	ins
Impact Year + 1	(-)	ins	ins	+
Impact Year +2	(-)	ins	ins	ins
<b>Cumulative % GDP</b>				
Impact Year	(-)	ins	ins	ins
Impact Year + 1	(-)	+	ins	+
Impact Year +2	ins	ins	ins	ins
<b>Yearly</b>				
Impact Year	(-)	ins	+	ins
Impact Year + 1	ins	ins	ins	ins
Impact Year +2	ins	ins	ins	ins

Notes: Group 2 country. Group 2 data used in the analysis. Complete analysis available from the author upon request. + indicates a factor enhancing the impact of oil price increases on GDP; ins = statistically insignificant at the 95% level; - indicates a factor weakening the impact of oil price increases on GDP.

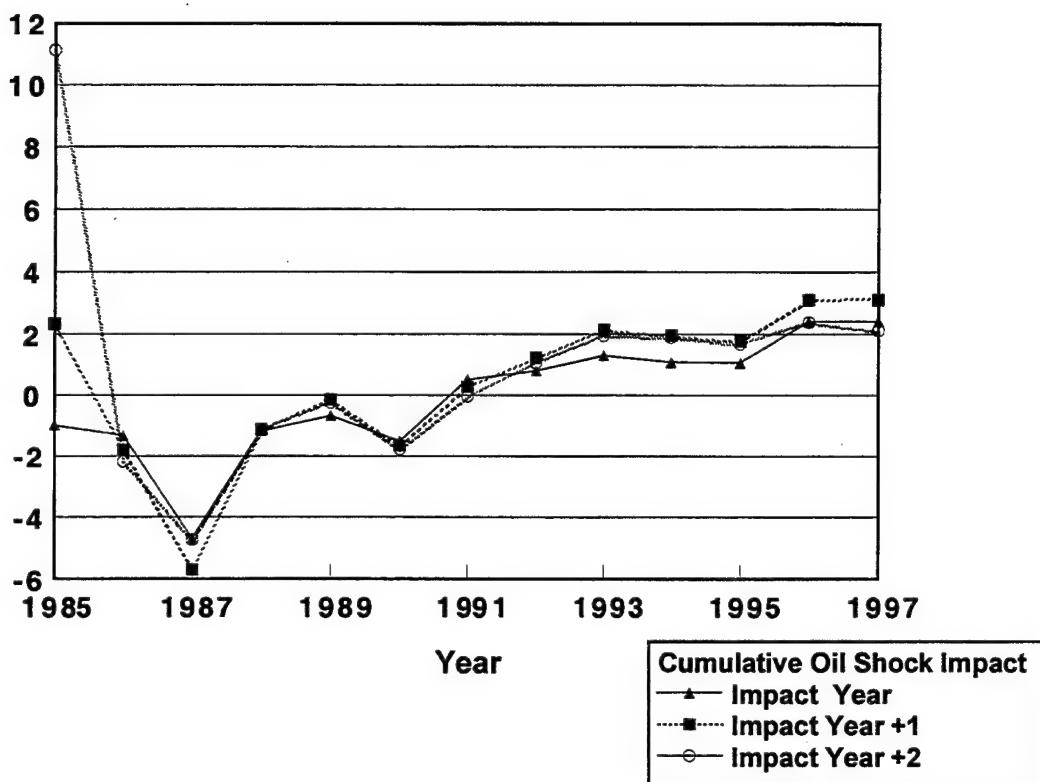
**Figure 57**

### **Yearly Oil Shock Impact: South Africa**



**Figure 58**

## Cumulative Oil Shock Impact: South Africa



10% Oil Shock % Impact on South African GDP

### **3. CONCLUSION**

The analyses of globalization and oil price shocks presented in this paper reveal some interesting and unanticipated patterns. The nature of these findings (Appendix F) is consistent with that of a recent major study published by the National Defense University.<sup>51</sup> More importantly, the findings have important implications for the role of naval forward presence, both at present and in the foreseeable future.

First the study demonstrated that it is possible to develop an operational definition for quantifying globalization. To date, the literature has had a hard time generalizing about globalization and the implications of this phenomenon for national economic performance. In large part this is due to the multidimensional nature of globalization. The factor and discriminate analysis undertaken here shows globalization to be comprised of four main dimensions:

1. Structural openness: The share of imports and exports in GDP, i.e., the proportion of national income accounted for by trade;
2. Financial globalization: Flows of various forms of capital such as foreign direct investment;
3. Global growth: The rate of expansion in imports and exports, and of the overall economy (as measured by GDP); and
4. General globalization: A dimension built around the growth model best depicting a country's national economic dynamics.

Over time aspects of globalization such as openness, finance, and growth have become more closely associated with the general globalization dimension, suggesting an increasingly strong link between elements in the global economy and the dynamics of economic growth in individual countries. Largely because of the general globalization dimension, it is possible to group most countries in the world into one of several categories defined by their pattern of integration into the world economy. The groupings include:

1. Endogenous growth countries, which are characterized by internally generated rapid innovation and technological adaptation. Most members of Group 1 are among the main

- industrial countries of North America, Europe and Japan/Australia. In the period since 1985 these countries have seen a rapid increase in their general globalization dimension;
2. Catching up countries are characterized by steady trade expansion and an increasing degree of general globalization, but at a much slower pace than the endogenous growth countries. They are increasing their structural openness, but face declining relative financial globalization.

Because of data limitations, it was impossible to undertake a detailed examination of the economies belonging to Groups 3 (primary producers), 4 (Malthusian economies), and 5 (isolated economies). It is fair to say, however, that Groups 1 and 2 include those economies responsible for the bulk of world trade and production.

Second, the analysis found clear linkages between the levels of certain globalization dimensions in Group 1 and 2 economies and the manner in which oil shocks affect economic growth (Table 41, Figure 59). Over time and contrary to popular opinion, Group 1 countries have become more vulnerable to oil price shocks. For example, a 10 percent increase in the price of oil today would cause a greater reduction in income, as measured by GDP growth, in highly globalized economies than it would have some twenty years ago.

General globalization and structural openness have been most responsible for the increased severity of oil shocks. Changes in the financial and global growth dimensions of globalization have not only played a much smaller role in this regard, but have made some countries less vulnerable and others more vulnerable, so that no clear patterns emerge from these aspects of globalization. Because naval forward presence/crisis response tends to suppress oil shocks and return prices to their equilibrium levels, the role of naval activities has taken on increased importance in recent years. With the likely continuation of trends in economic globalization, the ability of the navy to stabilize oil prices through crisis response should play an even greater positive economic role for the United States and other trade-dependent countries in the foreseeable future.

The two Group 1 exceptions to this overall trend toward vulnerability are Spain and Japan, where high levels of financial

flow have somewhat lessened the severity of oil price shocks. Nonetheless, oil price shocks still inflict considerable economic losses on these countries, highlighting an important and continuing role for naval crisis response.

As might be expected, the two oil economies included in the study, Mexico and Norway, would experience declines in income associated with forward deployed naval operations. Despite windfall oil revenues, however, increased globalization means Norway is obtaining smaller and smaller economic gains from oil price shocks, while Mexico's gains have stabilized. In both instances, the losses associated with naval forward presence are lower than might have been the case if the trends in globalization had been similar to those in the Group 1 countries as a whole.

A very different globalization/oil shock pattern characterizes Group 2 (catch up countries). On the one hand, increases in the general globalization dimension over time have lessened the impact of oil price shocks on these countries. On the other hand, growth in the financial dimension has worked to increase the severity of oil shocks on most Group 2 members. The net effect is that the Philippines, Portugal and South Africa have experienced a gradual increase in the damage oil price shocks inflict on economic growth. In South Korea's case, the forces of globalization have appeared to neutralize each other. The net effect has been a measurable loss in income associated with oil price shocks. Given these patterns, naval forward presence/crisis response should continue to play an important role (if less critical than for Group 1) in stabilizing Group 2 economies.

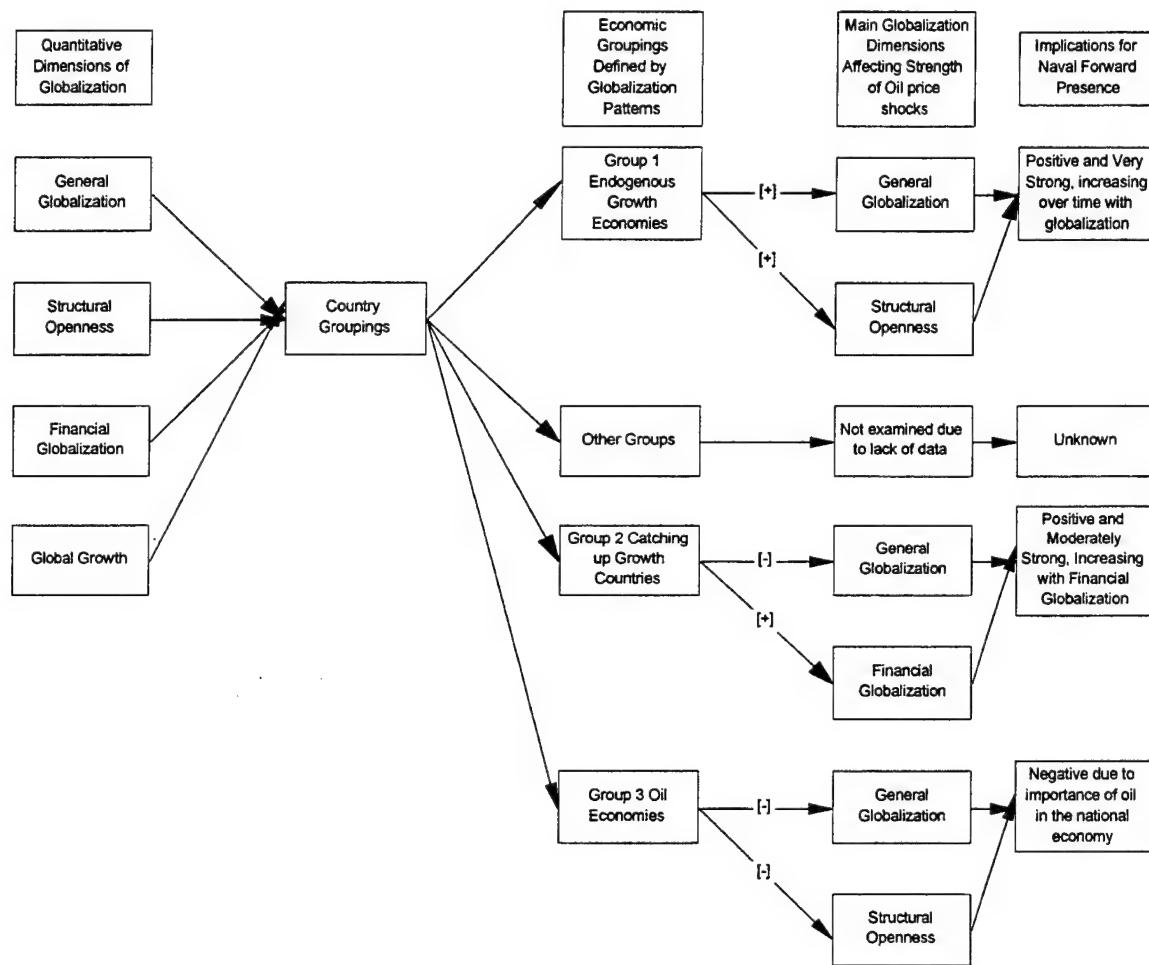
**Table 41**

**Summary Oil Shock Impact Analysis**

	Globalization	Dimension	Impact	Global Growth	Oil Shock Strength Over Time	Naval Forward Presence
	General Globalization	Structural Openness	Financial Globalization			
<b><u>Group 1 Countries</u></b>						
United States	+				+	++
Australia	+	+	+		(-)	++
Austria	+	+	(-)		+	++
Canada	+			+	+	++
Finland	+	+	+	(-)	+	++
France	+				+	++
Germany	+	+		+	+	++
Italy	+				+	++
Netherlands	+	+	?	+	+	++
Sweden	+	+	(-)	(-)	+	++
United Kingdom	+				+	++
Japan	+		(-)		+	+
Spain	+	+	(-)	(-)	=	+
<b><u>Group 2 Countries</u></b>						
South Korea	(-)	+	+	(-)	=	+
Philippines	(-)	(-)	+		+	+
Portugal	(-)			(-)	+	+
South Africa	(-)		+	+	+	+
<b><u>Oil Countries</u></b>						
Mexico (Group 2)		(-)	(-)			=
		(-)				
Norway (Group 1)		(-)	(-)	+	(-)	(-)
		(-)				

**Figure 59**

**Summary: Globalization and the Economic Strength of Naval Forward Presence**



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<sup>7</sup> Robert Looney, "Oil Revenues and the Dutch Disease in Saudi Arabia: Differential Impacts on Sectoral Growth," *Canadian Journal of Development Studies* vol. XI, no. 1 (1990), pp. 119-133.

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<sup>9</sup> Ibid, 56.

<sup>10</sup> James Rosenau also has outlined many of the benefits in and conceptual problems of devising a meaningful operational definition of globalization. See James Rosenau, "The Dynamics of Globalization: Toward an Operational Formulation," *Security Dialogue*, 27, (3) September 1996, 247-62.

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## APPENDIX A

### Globalization and Naval Forward Presence

The following is a section from our FY 2000 study outlining our tentative conclusions on the effect of globalization on the economic benefits derived from naval forward presence. This outline provided the framework for the empirical work on globalization undertaken in the current study.

#### **Components of Globalization**

As usually defined "globalization" means the process of making something worldwide in scope and application. It most commonly refers to the stunning increase in the number and variety of transnational transactions. The process of adapting to global conditions requires adjustments on the part of both producers and consumers. Specifically globalization refers to the worldwide convergence of supply and demand. This convergence or system takes many forms:

- Trade (goods, services)
- Finance (banking, investment, foreign exchange, capital movements)
- Communication (information, education, technology)
- Governance (institutions, education, technology)
- Culture (art, music, entertainment) and
- Work and leisure (labor, migration, tourism).

From a purely economic perspective the main trends of importance are:

#### **Upsurge of trade and changing trade linkages.**

During the 1985-2000 period supported by the proliferation of multilateral and regional trade initiatives, the ratio of world trade to GDP rose approximately three times faster than in the ten years prior and twice as fast as in the 1960s. Developing countries increased their share of world trade from 23 percent in 1985 to over 30 percent in 2000; they also deepened and diversified trade linkages; inter-developing country trade increased from 31 percent of total developing country trade in 1985 to over 40 percent by 2000. Between 1985 and 2000 the share of manufactured products in developing countries' exports increased from 47 percent to around 85 percent. A significant share of world trade is intra-firm and stimulated by FDI (foreign direct investment), as firms seek to reduce costs and tap markets.

#### **Integration of world capital markets.**

Developing countries are becoming increasingly integrated into the global financial system, following the liberalization of financial markets of recipient and source countries. Often with the aid of the International Monetary Fund (IMF), many developing countries have removed restrictions on payments for current account transactions, and lifted controls on cross-border financial flows, especially controls on foreign inflows. The good growth performance of some developing countries has contributed to make emerging markets more attractive to investors from advanced countries wishing to diversify their portfolios.

#### **Increased importance of private flows and foreign direct investment (FDI).**

The magnitude of private flows now overwhelms official financing. Capital inflows more than doubled in relation to developing country GDP between the early 1980s and 2000, with private capital flows rising from an annual 0.5 to 1.0 percent of developing country GDP to over 2 percent by 2000. Contributing to the rapid growth of FDI to developing countries in recent years has been the adoption of strong outward-oriented policies, including substantial improvements in their investment codes, embodying a shift from sovereign discretion to a free flow of FDI. FDI however has flowed massively towards only a few developing countries experiencing fast economic growth: for example during 1990-96 Asian countries received twice as much in percent of their GDP than African countries. Two thirds of all FDI during the last decade went to just eight developing countries, and half received almost none.

### **Advances in telecommunications and transport.**

The main factor behind globalization has been the increased ease and falling cost of communications—including transportation. The cost of phone calls has fallen by a factor of sixty since 1930; air-passenger miles per capita have increased 15 times in the last 20 years, and the advent of faxes and a global computer network has brought fundamental changes in the ways businesses and governments operate.

### **Changes in the movement of labor.**

As the world becomes more interconnected, flows of people across national borders have increased—though they remain small—contributed to ease of labor bottlenecks and transfer managerial know-how. The largest flows are between developing countries, but flows from developing to industrial countries have accelerated over the past two decades. In the future one can expect pressures for increased migration from developing countries, whereas developed countries will lower their demand for immigrant labor.

Globalization is spreading at an uneven pace, but wherever it develops, it has important security implications. Clearly in an economic sense it blurs national boundaries. Whether and to what extent it erodes the power of nation-states, even as it extends their sovereignty into new areas is a controversial issue with strong arguments made pro and con. However it clearly changes regional and international power relationships, shifts the mixture of interests at stake, and redefines long-standing alliances and conflicts. It will greatly influence the shape, content, and legitimacy of the future global security order (Strategic Assessment 1999, p. 19).

During the Cold War, the U.S. consciously pursued its own version of globalization. It sought to integrate and expand the democratic, market-oriented, Western or pro-Western community of nations [and was not afraid of using military force to achieve the goal of spreading democracy]. This community-building strategy encompassed both security and economics. The security component created a Western alliance system anchored in containment, deterrence, and collective defense. The economic component established a cooperative, rules-based trading system that rejected protectionism and lowered trade and investment barriers. Both components encouraged the notion that cooperation serves national interests better than conflict. Both stimulated greater efficiency, which freed up military and economic resources for more productive investment. In the post-Cold War era, this dual policy of expanding economic and security cooperation remains the main U.S. policy instrument for building a just, stable, and prosperous world order (Strategic Assessment 1999, pp 20-22).

It is generally felt that the United States is well positioned to compete in the global economy. Economic globalization is broadly consistent with U.S. international security and foreign policy interests. It:

- Facilitates integration
- Promotes openness
- Encourages institutional reforms
- Increases efficiency
- Accelerates the growth of US Gross Domestic Product (GDP)
- Helps control domestic inflationary forces.

### **Globalization and the Economic Impact of Naval Forward Presence**

Within the environment of deepening globalization, naval forward presence gives the U.S. the ability to shape environments through the strategic positioning of people and equipment. The inherent mobility of naval forces provides the ability to rapidly project and concentrate military power worldwide, deterring and, if necessary, defeating aggression. U.S. naval forces receive an increasing share of crisis response missions because forward deployed naval forces will be the only timely option unconstrained by access agreements in contingencies.

Naval forward presence can be manifested in a number of ways, but the most common is the presence of a carrier battle group in an area of interest such as the Mediterranean Sea or the Persian Gulf.

On average, 50 percent of the U.S. Navy's active fleet is underway on any given day, and more than a third is forward deployed.

The United States is a maritime nation, and international ocean policy is important to Americans. Today, 95 percent of U.S. trade is transported by sea, which represents 20 percent of the GDP (Strategic Assessment 1999, p. 308). In today's global economy, any interruption in free trade, caused by a military crisis for example, has a negative economic impact, and influences a nation's well being (not only in the troubled region but worldwide). Timely responses by external military forces can stabilize the situation and restore confidence and economic activity.

In the economic sense, naval forward engagement allows/provides:

- Stability and security of free trade
- Quick crisis responses.

In our earlier study both were found to affect the market outlook through

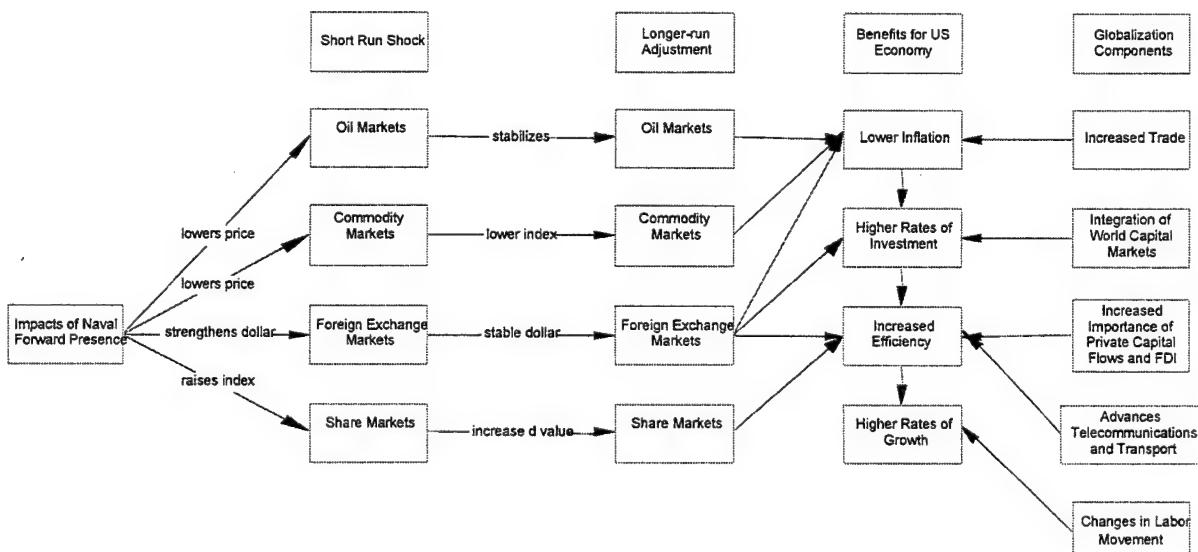
- Generally more stable prices (lower price fluctuations)
- Decreases in future prices following a naval crisis response (e.g. decrease in oil prices after naval crisis response examples: 1990 Gulf War, 1994 Iraq-Kuwait Border Incident, 1987 Iranian Attacks on Gulf Shipping)

Economic benefits include increases in Gross Domestic Product (GDP), reduced unemployment and inflation, expanded industrial production, etc. However, because the role of forward-deployed naval forces is primarily preventive in nature it is difficult to measure the full benefits derived from that activity. In effect all quantitative measurements of benefits are by nature underestimates because we have no way of assessing the economic costs of many crisis that were prevented simply because of the presence of naval forces.

With this caveat in mind the findings of the present study of four specific instances of naval forward presence/crisis response suggests that both globalization and naval forward presence complement each other in creating an environment in which the United States economy is able to fare better than would be the case if either or both were absent. These effects and linkages are summarized in Figure A-1.

**Figure A-1**

**Naval Forward Presence and Globalization:  
Complementarities and General Impact on the United States Economy**

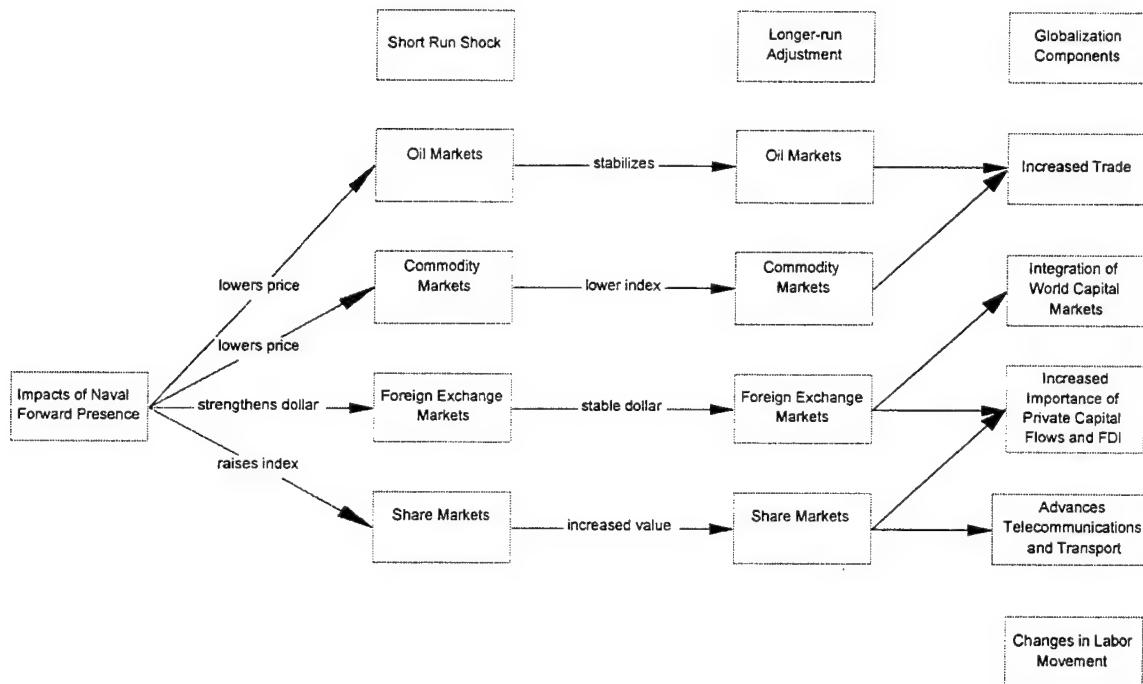


In particular the VAR forecasting models were based on the linkage from oil/exchange rate/share market shifts resulting from Naval forward presence/crisis response to increased rates of investment and ultimately higher levels of Gross Domestic Product (GDP). While the details (role of exchange rates and share markets) may have varied slightly from one case to another the basic mechanism was similar in all cases. On the globalization side of the equation (right hand column) a number of developments in the world market economy tend to reinforce the positive Naval Forward presence impact on the US economy.

It is also clear that the process of globalization can only proceed in an environment characterized by stable, secure trading conditions, provided in large part by forward deployed naval forces. Specifically (Figure A-2), more stable oil prices derived from naval crisis response induce greater trade through reducing some of the risks associated with unexpected increases in transport costs. The stronger more stable dollar associated with naval forward presence aids the development of stronger US Share markets (foreign investors avoid much of the exchange risk associated with other markets). The increased value in share markets associated with naval forward presence also increases investment and ultimately economic growth.

**Figure A-2**

**Naval Forward Presence and Globalization:  
Affect of Naval Forward Presence on the Components of Increased Globalization**



While the results of the study suggest that naval forward presence/crisis response have a strong and positive impact on the United States economy, some observers have argued that in the future these impacts are likely to be diminished. For example one might argue that oil accounts for a lower share of GDP (energy conservation/alternative fuels) so that the oil shocks that have disrupted the economy in the past are becoming less and less of a threat to prosperity. A corollary is that the so-called new economy is more of a service economy and much less dependent on energy and raw materials.

Despite the fact that this is a commonly held view, it is not based on any real hard evidence. Our results suggest a fairly significant oil related impact on the United States economy under a series of alternative environments. While the magnitudes of each case vary greatly, there is no apparent trend towards diminished effectiveness of forward deployed naval forces in stabilizing oil markets.

Finally several recent studies avoid the new economy arguments by contending that the recent expansion in the economy is due to a good oil shock (fairly long period of low oil prices preceding the boom).

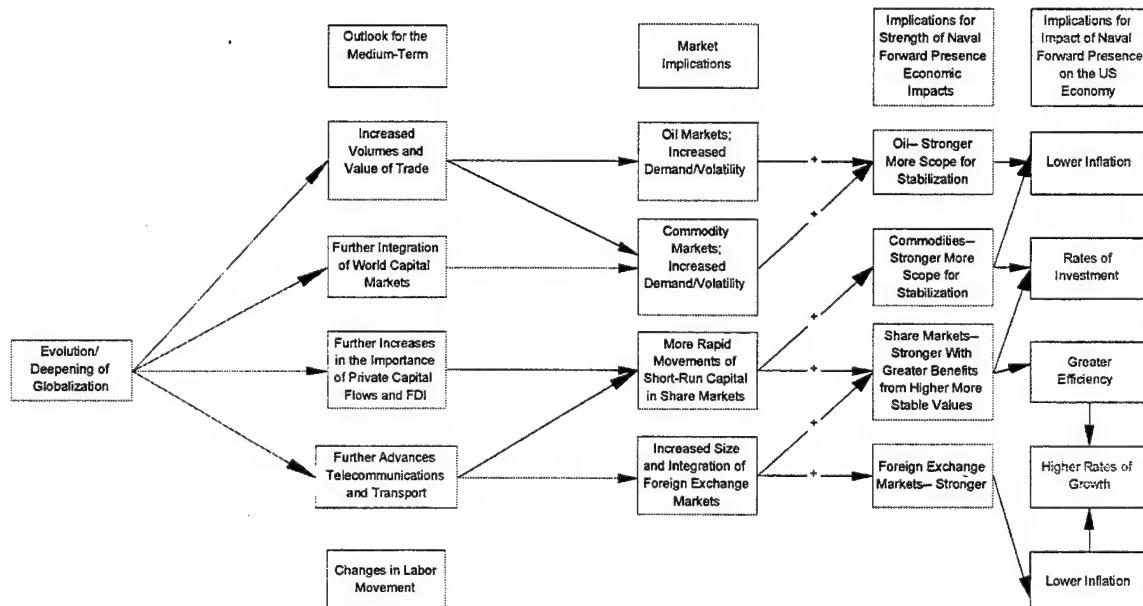
## Conclusions

As for the future, it is likely that increased world trade (Figure A-3) and increased economic growth associated with globalization will place a growing demand on oil supplies creating the chance of more volatile oil shocks associated with crisis around the world. These developments rather than lower the scope for naval forces will actually enhance the chance of favorable interventions by forward deployed naval forces. Similar arguments can be made for likely changes in the share and foreign exchange markets.

In sum, likely changes in the various facets should strengthen the economic impacts of Naval forward presence/crisis response. In turn, the stability provided by Naval forward presence should assure continued deepening of the globalization process. This would set up a virtuous circle that would reinforce itself over time.

**Figure 24**

Naval Forward Presence and Globalization: Affect of Likely Globalization Trends on the Economic Impacts Associated with Naval Forward Presence



## APPENDIX B

### Series Definitions From the World Bank Development Indicators

#### Series: Credit to private sector (% of GDP) (FS.AST.PRVT.GD.ZS)

Credit to private sector refers to financial resources provided to the private sector--such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable--that establish a claim for repayment. For some countries these claims include credit to public enterprises. For more information, see WDI table 5.1.

#### Series: Current account balance (% of GDP) (BN.CAB.XOKA.GD.ZS)

Current account balance is the sum of net exports of goods, services, net income, and net current transfers. For more information, see WDI table 4.17.

#### Series: Domestic absorption (% of GDP) (NE.DAB.TOTL.ZS)

Domestic absorption is the sum of private consumption, general government consumption and gross domestic investment. For more information, see WDI table 4.9.

#### Series: Domestic credit provided by banking sector (% of GDP) (FS.AST.DOMS.GD.ZS)

Domestic credit provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data are available (including institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other banking institutions are savings and mortgage loan institutions and building and loan associations. For more information, see WDI table 5.4.

#### Series: Domestic financing, total (% of GDP) (GB.FIN.DOMS.GD.ZS)

Domestic financing (obtained from residents) refers to the means by which a government provides financial resources to cover a budget deficit or allocates financial resources arising from a budget surplus. It includes all government liabilities--other than those for currency issues or demand, time, or savings deposits with government--or claims on others held by government and changes in government holdings of cash and deposits. Government guarantees of the debt of others are excluded. Data are shown for central government only. For more information, see WDI table 4.13.

#### Series: Energy imports, net (% of commercial energy use) (EG.IMP.CON.S.ZS)

Net energy imports are calculated as energy use less production, both measured in oil equivalents. A negative value indicates that the country is a net exporter. Commercial energy use refers to apparent consumption, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport. For more information, see WDI table 3.7.

#### Series: Expenditure, total (% of GDP) (GB.XPD.TOTL.GD.ZS)

Total expenditure of the central government includes both current and capital (development) expenditures and excludes lending minus repayments. Data are shown for central government only. For more information, see WDI table 4.13.

#### Series: Exports of goods and services (% of GDP) (NE.EXP.GNFS.ZS)

Exports of goods and services represent the value of all goods and other market services provided to or received from the rest of the world. Included is the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. Labor and property income (formerly called factor services) is excluded. Transfer payments are excluded from the calculation of GDP. For more information, see WDI table 4.9.

#### Series: Exports of goods and services (annual % growth) (NE.EXP.GNFS.KD.ZG)

Annual growth rate of exports of goods and services based on constant local currency. Aggregates are based on constant 1995 U.S. dollars. Exports of goods and services represent the value of all goods and other market services provided to or received from the rest of the world. Included is the value of

merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. Labor and property income (formerly called factor services) is excluded. For more information, see WDI table 4.10.

**Series: Financing from abroad (% of GDP) (GB.FIN.ABRD.GD.ZS)**

Financing from abroad (obtained from nonresidents) refers to the means by which a government provides financial resources to cover a budget deficit or allocates financial resources arising from a budget surplus. It includes all government liabilities--other than those for currency issues or demand, time, or savings deposits with government--or claims on others held by government and changes in government holdings of cash and deposits. Government guarantees of the debt of others are excluded. Data are shown for central government only. For more information, see WDI table 4.13.

**Series: Foreign direct investment, net inflows (% of GDI) (BX.KLT.DINV.DT.GI.ZS)**

Foreign direct investment is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. Gross domestic investment (used in the denominator) is gross domestic fixed investment plus net changes in stocks. For more information, see WDI table 5.1.

**Series: Foreign direct investment, net inflows (% of GDP) (BX.KLT.DINV.DT.GD.ZS)**

Foreign direct investment is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. For more information, see WDI table 5.1.

**Series: GDP growth (annual %) (NY.GDP.MKTP.KD.ZG)**

Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 1995 U.S. dollars. GDP measures the total output of goods and services for final use occurring within the domestic territory of a given country, regardless of the allocation to domestic and foreign claims. Gross domestic product at purchaser prices is the sum of gross value added by all resident producers in the economy plus any taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. The residency of an institution is determined on the basis of economic interest in the territory for more than a year. For more information, see WDI tables 4.1 and 4.2.

**Series: Gross foreign direct investment (% of GDP, PPP) (BG.KLT.DINV.GD.PP.ZS)**

Gross foreign direct investment is the sum of the absolute values of inflows and outflows of foreign direct investment recorded in the balance of payments financial account. It includes equity capital, reinvestment of earnings, other long-term capital, and short-term capital. This indicator differs from the standard measure of foreign direct investment (see table 6.7), which captures only inward investment. The indicator is calculated as a ratio to GDP converted to international dollars using purchasing power parities (see WDI tables 4.10 and 4.11 for a discussion of PPP). For more information, see WDI table 6.1.

**Series: Gross private capital flows (% of GDP, PPP) (BG.KAC.FNEI.GD.PP.ZS)**

Gross private capital flows are the sum of the absolute values of direct, portfolio, and other investment inflows and outflows recorded in the balance of payments financial account, excluding changes in the assets and liabilities of monetary authorities and general government. The indicator is calculated as a ratio to GDP converted to international dollars using purchasing power parities (see WDI tables 4.10 and 4.11 for a discussion of PPP). For more information, see WDI table 6.1.

**Series: Imports of goods and services (% of GDP) (NE.IMP.GNFS.ZS)**

Imports of goods and services represent the value of all goods and other market services provided to or received from the rest of the world. Included is the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. Labor and property income (formerly called factor services) is excluded. For more information, see WDI table 4.9.

**Series: Imports of goods and services (% of GDP) (NE.IMP.GNFS.ZS)**

Imports of goods and services represent the value of all goods and other market services provided to or received from the rest of the world. Included is the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. Labor and property income (formerly called factor services) is excluded. For more information, see WDI table 4.9.

**Series: Telephone mainlines (per 1,000 people) (IT.MLT.MAIN.P3)**

Telephone mainlines are telephone lines connecting a customer's equipment to the public switched telephone network. Data are presented per 1,000 people for the entire country. For more information, see WDI table 5.10.

**Series: Trade (% of GDP) (NE.TRD.GNFS.ZS)**

Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product. For more information, see WDI table 4.9.

**Series: Trade (% of GDP, PPP) (TG.VAL.TOTL.GD.PP.ZS)**

Trade in goods as a share of PPP GDP is the sum of merchandise exports and imports measured in current U.S. dollars divided by the value of GDP converted to international dollars using purchasing power parity rates (see WDI tables 4.10 and 4.11 for a discussion of PPP). For more information, see WDI table 6.1.

**Series: Trade (% of goods GDP) (TG.VAL.TOTL.GG.ZS)**

Trade in goods as a share of goods GDP is the sum of merchandise exports and imports divided by the current value of GDP in U.S. dollars after subtracting value added in services. For more information, see WDI table 6.1.

## APPENDIX C

### Structural Variables Included in the Factor/Discriminant Analysis

Country	Structural Variable				
	SACHS	SACHSA	SMALL	OIL	SUBAF
Afghanistan	4	4	0	0	0
Albania	4	0	0	0	0
Algeria	3	3	0	1	0
American Samoa				0	0
Andorra			1	0	0
Angola	3	3	0	1	1
Antigua and Barbuda			1	0	0
Argentina		2	0	0	0
Armenia	5	5	0	0	0
Aruba			1	0	0
Australia	1	1	0	0	0
Austria	1	1	0	0	0
Azerbaijan	5	5	0	0	0
Bahamas, The			1	0	0
Bahrain		3	0	1	0
Bangladesh	2	2	0	0	0
Barbados			1	0	0
Belarus	5	5	0	0	0
Belgium	1	1	0	0	0
Belize			0	0	0
Benin	4	4	0	0	1
Bermuda			1	0	0
Bhutan			0	0	0
Bolivia	3	3	0	0	0
Bosnia and Herzegovina			0	0	0
Botswana	4	3	0	0	0
Brazil		2	0	0	0
Brunei		3	0	0	0
Bulgaria	2	2	0	0	0
Burkina Faso	4	4	0	0	1
Burundi		4	0	0	0
Cambodia	4	4	0	0	0
Cameroon	3	3	0	0	1
Canada	1	1	0	0	0

Structural Variables Included in the Factor/Discriminate Analysis (cont'd)

Country	Structural Variable				
	SACHS	SACHSA	SMALL	OIL	SUBAF
Cape Verde		4	1	0	1
Cayman Islands			1	0	0
Central African Republic	4	4	0	0	1
Chad	4	4	0	0	1
Channel Islands			1	0	0
Chile	3	3	0	0	0
China	2	2	0	0	0
Colombia		3	0	0	0
Comoros			1	0	1
Congo, Dem. Rep.	4	4	0	0	1
Congo, Rep.	3	3	0	0	1
Costa Rica	3	3	0	0	0
Cote d'Ivoire	3	3	0	0	1
Croatia			0	0	0
Cuba			0	0	0
Cyprus			1	0	0
Czech Republic		2	0	0	0
Denmark	1	1	0	0	0
Djibouti			1	0	0
Dominica			0	0	0
Dominican Republic	2	2	0	0	0
Ecuador	3	3	0	0	0
Egypt, Arab Rep.		2	0	0	0
El Salvador		4	0	0	0
Equatorial Guinea		4	0	0	1
Eritrea	4	4	0	0	0
Estonia		2	0	0	0
Ethiopia	4	4	0	0	1
Faeroe Islands				0	0
Fiji			1	0	0
Finland	1	1	0	0	0
France	1	1	0	0	0
French Polynesia			1	0	0
Gabon	4	4	0	1	1
Gambia, The	3	3	0	0	1
Georgia		5	0	0	0
Germany	1	1	0	0	0
Ghana	3	3	0	0	0

Structural Variables Included in the Factor/Discriminate Analysis (cont'd)

Country	Structural Variable				
	SACHS	SACHSA	SMALL	OIL	SUBAF
Greece	2	0	0	0	
Greenland		1	0	0	
Grenada		1	0	0	
Guam			0	0	
Guatemala	4	4	0	0	0
Guinea	3	3	0	0	1
Guinea-Bissau	3	3	0	0	1
Guyana		4	0	0	0
Haiti	4	4	0	0	0
Honduras	3	3	0	0	0
Hong Kong, China	1	1	0	0	0
Hungary	2	2	0	0	0
Iceland	1	1	0	0	0
India		2	0	0	0
Indonesia	2	2	0	1	0
Iran, Islamic Rep.		3	0	1	0
Iraq	4	4	0	1	0
Ireland	1	1	0	0	0
Isle of Man			1	0	0
Israel	1	1	0	0	0
Italy	1	1	0	0	0
Jamaica	2	2	1	0	0
Japan	1	1	0	0	0
Jordan	4	4	0	0	0
Kazakhstan	5	5	0	1	0
Kenya	3	3	0	0	1
Kiribati			0	0	0
Korea, Dem. Rep.		5	0	0	0
Korea, Rep.	1	1	0	0	0
Kuwait	3	3	0	1	0
Kyrgyz Republic	5	5	0	0	0
Lao PDR	4	4	0	0	0
Latvia			0	0	0
Lebanon			0	0	0
Lesotho	4	4	0	0	0

Structural Variables Included in the Factor/Discriminate Analysis (cont'd)

Country	Structural Variable				
	SACHS	SACHSA	SMALL	OIL	SUBAF
Liberia	4	4	0	0	1
Libya		3	0	1	0
Liechtenstein			1	0	0
Lithuania			0	0	0
Luxembourg		1	1	0	0
Macao, China			1	0	0
Macedonia, FYR			0	0	0
Madagascar		4	0	0	1
Malawi		4	0	0	1
Malaysia	2	2	0	0	0
Maldives			1	0	0
Mali	4	4	0	0	1
Malta			1	0	0
Marshall Islands				0	0
Mauritania	3	3	0	0	0
Mauritius	2	2	1	0	1
Mayotte				0	0
Mexico	2	2	0	1	0
Micronesia, Fed. Sts.				0	0
Moldova	5	5	0	0	0
Monaco			1	0	0
Mongolia	2	2	0	0	0
Morocco		3	0	0	0
Mozambique	3	3	0	0	1
Myanmar		4	0	0	0
Namibia	4	4	0	0	1
Nepal	4	4	1	0	0
Netherlands	1	1	0	0	0
Netherlands Antilles			1	0	0
New Caledonia			1	0	0
New Zealand	1	1	0	0	0
Nicaragua	2	2	0	0	0
Niger	4	4	0	0	1
Nigeria	3	3	0	1	1
Northern Mariana Islands				0	0
Norway	1	1	0	0	0

Structural Variables Included in the Factor/Discriminate Analysis (cont'd)

Country	Structural Variable				
	SACHS	SACHSA	SMALL	OIL	SUBAF
Oman	2	2	0	1	0
Pakistan	4	4	0	0	0
Palau			0	0	0
Panama		2	0	0	0
Papua New Guinea	3	3	0	0	0
Paraguay		4	0	0	0
Peru		3	0	0	0
Philippines	2	2	0	0	0
Poland	2	2	0	0	0
Portugal	2	2	0	0	0
Puerto Rico			0	0	0
Qatar		3	0	1	0
Romania	2	2	0	0	0
Russian Federation			0	0	0
Rwanda	4	4	0	0	1
Samoa				0	0
Sao Tome and Principe			0	0	1
Saudi Arabia	3	3	0	1	0
Senegal		4	0	0	1
Seychelles			0	0	0
Sierra Leone	3	3	0	0	1
Singapore	1	1	0	0	0
Slovak Republic			0	0	0
Slovenia			0	0	0
Solomon Islands				0	0
Somalia	4	4	0	0	0
South Africa		2	0	0	1
Spain	2	2	0	0	0
Sri Lanka	2	2	0	0	0
St. Kitts and Nevis			1	0	0
St. Lucia			1	0	0
St. Vincent and the Grenadines			1	0	0
Sudan	4	4	0	0	0
Suriname			0	0	0
Swaziland			0	0	1
Sweden	1	1	0	0	0
Switzerland	1	1	0	0	0
Syrian Arab Republic	3	3	0	0	0

Structural Variables Included in the Factor/Discriminate Analysis (cont'd)

Country	Structural Variable				
	SACHS	SACHSA	SMALL	OIL	SUBAF
Tajikistan	4	4	0	0	0
Tanzania	3	3	0	0	1
Thailand	2	2	0	0	0
Togo	3	3	0	0	1
Tonga			0	0	0
Trinidad and Tobago	3	3	0	1	0
Tunisia	2	2	0	0	0
Turkey	2	2	0	0	0
Turkmenistan	5	5	0	0	0
Uganda	3	3	0	0	1
Ukraine			0	0	0
United Arab Emirates	3	3	0	1	0
United Kingdom	1	1	0	0	0
United States	1	1	0	0	0
Uruguay		2	0	0	0
Uzbekistan	5	5	0	0	0
Vanuatu			0	0	0
Venezuela, RB	3	3	0	1	0
Vietnam	2	2	0	0	0
Virgin Islands (U.S.)			0	0	0
West Bank and Gaza			0	0	0
Yemen, Rep.	3	3	0	0	0
Zambia	4	4	0	0	1
Zimbabwe	3	3	0	0	1

## APPENDIX D

### FACTOR/DISCRIMINANT COUNTRY ANALYSIS: 1995

**TABLE D-1**

**Dimensions of Globalization:**  
Principal Components--Initial Country Classification, 1995

Rotated Varimax Component Matrix

	Factor1 Structural Openness	Factor2 Global- ization	Factor3 Global Finance	Factor4 Trade Expansion	Factor5 Global Structure
Trade (%GDP)	0.969*		0.156		
Expenditure (%GDP)	0.925*		-0.239		0.152
Imports (%GDP)	0.867*		0.445		
Trade (%Goods GDP)	0.859*	0.189	0.159	0.110	
Small Country Dummy	0.417	-0.121	-0.232	-0.163	-0.154
Telephone Mainlines (1000 people)	0.895*	-0.131			
Gross PCF (%GDP PP)		0.894*			
Country Classification	0.163	-0.714*	0.303	-0.277	
Exports (%GDP)	0.300	0.626*	0.390		-0.153
Gross FDI (% GDP PP)	0.243	0.622*	0.470		0.215
Domestic Credit Banking System (%GDP)		0.506*	-0.196	0.194	-0.190
Domestic Absorption (%GDP)	0.191	-0.192	0.872*	0.112	-0.189
Financing From Abroad (%GDP)	-0.170		0.634*	-0.302	0.336
GDP Growth		-0.120		0.813*	
Import Growth				0.770*	
Export Growth		0.172		0.742*	0.175
Sub-Saharan Dummy		-0.297	-0.153	-0.318	-0.278
Oil Dummy	-0.121	-0.173	-0.214	-0.106	0.691*
Domestic Financing (%GDP)	-0.201	0.237	-0.393		-0.614*
FDI Net Inflows (%GDP)	0.195	0.101		0.247	0.604*
<hr/>					
Notes: Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization; Rotation converged in 9 iterations. * = factor loadings 0.50 or greater; Due to missing values, 54 countries remained in the analysis.					
Country Factor Scores					
United States	-1.242	1.185	0.450	0.209	-0.023
Group 1 Average	-0.249	1.555	0.196	-0.066	0.176
Group 2 Average	0.089	-0.098	-0.282	0.383	-0.053
Group 3 Average	0.241	-0.731	-0.105	-0.401	-0.309
Group 4 Average	0.417	-1.224	1.456	0.329	1.211

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TABLE D-2

Dimensions of Globalization: Initial Country Classification Factor Scores, 1995

	Factor1 Structural Openness	Factor2 Global- ization	Factor3 Global Finance	Factor4 Trade Expansion	Factor5 Global Structure
<b><u>1.0 Endogenous Growth Countries</u></b>					
1.00 Australia	-0.645	1.211	0.406	0.264	-0.287
1.00 Austria	0.175	1.646	-0.068	-0.349	0.433
1.00 Finland	-0.213	1.975	-0.445	-0.065	0.703
1.00 France	-0.674	1.633	0.096	-0.229	0.664
1.00 Germany	-0.645	1.503	0.317	-0.294	0.186
1.00 Iceland	-0.268	1.008	0.134	-0.883	0.053
1.00 Netherlands	1.136	2.678	0.875	-0.396	0.021
1.00 Norway	0.170	1.464	0.383	-0.227	-0.261
1.00 Korea, Rep.	-0.359	0.381	-0.473	1.500	-0.066
1.00 United Kingdom	-0.170	2.418	0.481	-0.251	0.513
1.00 United States	-1.242	1.185	0.450	0.209	-0.023
Group Average	-0.249	1.555	0.196	-0.066	0.176
<b><u>2.0 Catching Up Growth Countries</u></b>					
2.00 Argentina	-1.298	-0.122	0.439	-0.535	-0.721
2.00 Bulgaria	0.350	0.381	-0.917	0.968	0.729
2.00 China	-0.642	-0.507	-0.407	1.099	-0.604
2.00 Egypt	-0.545	-0.285	-0.304	0.379	0.377
2.00 Estonia	2.288	-0.072	-0.082	-0.131	-0.223
2.00 Greece	-1.144	0.555	-0.119	-0.223	1.075
2.00 Hungary	0.525	0.690	1.112	0.040	-0.844
2.00 India	-1.465	-0.666	-0.503	1.764	0.332
2.00 Indonesia	-0.369	-0.836	-0.165	0.890	-1.894
2.00 Dominican Republic	0.078	-0.492	-0.355	0.103	-0.577
2.00 Malaysia	3.318	0.090	-1.071	1.599	-0.530
2.00 Mauritius	2.176	-0.327	-3.571	-0.910	1.064
2.00 Mexico	-0.207	-0.397	1.137	-1.187	-3.007
2.00 Nicaragua	0.643	-0.085	-0.102	0.968	0.641
2.00 Philippines	0.192	-0.569	-0.477	0.859	-0.104
2.00 Poland	-0.538	-0.045	0.238	1.275	0.011
2.00 Portugal	-0.064	0.923	0.646	-0.352	0.472
2.00 South Africa	-0.653	0.148	-1.146	0.108	0.892
2.00 Spain	-0.766	0.847	0.254	-0.027	0.473
2.00 Sri Lanka	-0.000	-0.558	-0.003	-0.153	0.719
2.00 Thailand	0.514	-0.355	-0.504	1.424	-0.109
2.00 Tunisia	0.599	-0.279	0.080	-0.397	-0.005
2.00 Turkey	-0.935	-0.292	-0.670	1.238	0.610
Group Average	0.089	-0.098	-0.282	0.383	-0.053

**TABLE D-2 (cont'd)**

Dimensions of Globalization: Country Factor Scores, 1995

	Factor1 Structural Openness	Factor2 Global- ization	Factor3 Global Finance	Factor4 Trade Expansion	Factor5 Global Structure
<b><u>3.0 Primary Commodity Producers</u></b>					
3.00 Bolivia	-0.447	-0.778	1.293	0.274	-0.793
3.00 Botswana	0.608	-0.649	-0.307	-0.080	-0.660
3.00 Cameroon	-0.565	-1.018	-0.939	-0.951	-0.074
3.00 Colombia	-1.035	-0.822	-0.139	0.224	0.164
3.00 Costa Rica	0.629	-0.491	-0.326	-0.144	-0.246
3.00 Cote d'Ivoire	0.284	-0.955	-0.155	-0.256	-0.084
3.00 Iran	-0.709	-0.846	-0.182	-1.498	-1.615
3.00 Kenya	0.030	-0.961	-0.981	-0.321	0.829
3.00 Morocco	-0.485	-0.335	-0.426	-0.512	0.635
3.00 Peru	-1.081	-0.967	0.729	1.052	-0.324
3.00 Sierra Leone	-0.795	-0.997	0.138	-3.447	0.244
3.00 Trinidad	0.943	-0.125	0.523	0.475	-2.864
3.00 Venezuela	-0.642	-0.557	-0.306	0.263	-1.606
3.00 Yemen, Rep.	-0.110	-0.739	-0.397	-0.698	2.065
Group Average	0.241	-0.731	-0.105	-0.401	-0.309
<b><u>4.0 Malthusian Economies</u></b>					
4.00 Albania	-0.868	-1.088	0.598	0.916	1.154
4.00 Jordan	1.440	-0.984	0.150	0.321	0.660
4.00 Lesotho	2.105	-1.779	4.935	0.314	2.521
4.00 Pakistan	-1.009	-1.045	0.142	-0.232	0.511
Group Average	0.417	-1.224	1.45625	0.32975	1.2115
<b><u>5.0 Isolated Economies</u></b>					
5.00 Belarus	0.743	-0.816	-0.279	-3.474	0.286

Notes: Based on factor analysis in Table D-1.

**TABLE D-3**

Initial Country Group Differences, 1995

Group Statistics					
Expanded Country Classification	Mean	Std. Deviation	Valid N (listwise)		
			Unweighted	Weighted	
1.00	REGR factor score 1 for analysis 1	-.2490591	.61469719	11	11.000
	REGR factor score 2 for analysis 1	1.5552225	.64344942	11	11.000
	REGR factor score 3 for analysis 1	.1962049	.40578344	11	11.000
	REGR factor score 4 for analysis 1	-.0656132	.60314872	11	11.000
	REGR factor score 5 for analysis 1	.1761513	.35226058	11	11.000
2.00	REGR factor score 1 for analysis 1	.0893338	1.17745910	23	23.000
	REGR factor score 2 for analysis 1	-.0982351	.48891236	23	23.000
	REGR factor score 3 for analysis 1	-.2824317	.93237854	23	23.000
	REGR factor score 4 for analysis 1	.3826997	.83056070	23	23.000
	REGR factor score 5 for analysis 1	-.0530621	.96479733	23	23.000
3.00	REGR factor score 1 for analysis 1	-.3081488	.62381020	13	13.000
	REGR factor score 2 for analysis 1	-.7504410	.27255626	13	13.000
	REGR factor score 3 for analysis 1	-.0885453	.63560731	13	13.000
	REGR factor score 4 for analysis 1	-.4211962	1.12477483	13	13.000
	REGR factor score 5 for analysis 1	-.3141481	1.24962415	13	13.000
4.00	REGR factor score 1 for analysis 1	.4595255	1.38022827	5	5.000
	REGR factor score 2 for analysis 1	-1.07772	.45998370	5	5.000
	REGR factor score 3 for analysis 1	1.1000793	2.16905209	5	5.000
	REGR factor score 4 for analysis 1	.2351810	.45866835	5	5.000
	REGR factor score 5 for analysis 1	.9206226	1.02654064	5	5.000
5.00	REGR factor score 1 for analysis 1	.7435160	a	1	1.000
	REGR factor score 2 for analysis 1	-.8169858	a	1	1.000
	REGR factor score 3 for analysis 1	-.2797282	a	1	1.000
	REGR factor score 4 for analysis 1	-3.47422	a	1	1.000
	REGR factor score 5 for analysis 1	.2861587	a	1	1.000
Total	REGR factor score 1 for analysis 1	-.0311276	.98280336	53	53.000
	REGR factor score 2 for analysis 1	-.0210051	.99747028	53	53.000
	REGR factor score 3 for analysis 1	-.0050584	1.00887188	53	53.000
	REGR factor score 4 for analysis 1	.0057826	1.00865771	53	53.000
	REGR factor score 5 for analysis 1	.0287280	.98681698	53	53.000

a. Insufficient data

**TABLE D-4**

Initial Country Group Discriminant Analysis, 1995

**Variables in the Analysis**

Step	Tolerance	F to Remove	Wilks' Lambda
1 REGR factor score 2 for analysis 1	1.000	40.317	
2 REGR factor score 2 for analysis 1 REGR factor score 4 for analysis 1	.968 .968	41.183 6.665	.664 .233

**TABLE D-5**

Initial Country Group Comparisons, 1995

**Pairwise Group Comparisons<sup>a,b</sup>**

Step	Expanded Country	1.00	2.00	3.00	4.00	5.00
1	1.00 F		87.681	136.520	102.708	22.233
	Sig.		.000	.000	.000	.000
	2.00 F	87.681		15.227	16.983	2.134
	Sig.	.000		.000	.000	.151
	3.00 F	136.520	15.227		1.667	.018
	Sig.	.000	.000		.203	.895
	4.00 F	102.708	16.983	1.667		.244
	Sig.	.000	.000	.203		.623
	5.00 F	22.233	2.134	.018	.244	
	Sig.	.000	.151	.895	.623	
2	1.00 F		42.940	71.397	50.861	21.708
	Sig.		.000	.000	.000	.000
	2.00 F	42.940		13.227	8.873	12.090
	Sig.	.000		.000	.001	.000
	3.00 F	71.397	13.227		1.597	6.100
	Sig.	.000	.000		.213	.004
	4.00 F	50.861	8.873	1.597		7.752
	Sig.	.000	.001	.213		.001
	5.00 F	21.708	12.090	6.100	7.752	
	Sig.	.000	.000	.004	.001	

a. 1, 48 degrees of freedom for step 1.

b. 2, 47 degrees of freedom for step 2.

**TABLE D-6**

Dimensions of Globalization: Initial Country Group Discriminant Scores, 1995

Country	Function 1	Function 2
<b>Endogenous Growth Countries</b>		
Australia	2.66623	0.08132
Austria	3.39466	-0.70308
Finland	4.16923	-0.43349
France	3.40392	-0.56252
Germany	3.10971	-0.61465
Iceland	1.89346	-1.20641
Netherlands	5.54714	-0.93894
Norway	3.04833	-0.52992
United Kingdom	5.04455	-0.72591
United States	2.59313	0.02280
Group Average	3.48704	-0.56108
<b>Other Countries</b>		
Albania	-1.96665	1.23825
Argentina	-0.37577	-0.60576
Belarus	-2.71543	-3.87149
Bolivia	-1.50856	0.44326
Botswana	-1.34645	0.01105
Bulgaria	1.13484	1.03870
Cameroon	-2.38099	-0.92738
China	-0.69398	1.34692
Colombia	-1.61778	0.39339
Costa Rica	-1.03193	-0.09006
Cote d'Ivoire	-2.04161	-0.13788
Dominican Republic	-0.96077	0.19606
Egypt, Arab Rep.	-0.44338	0.47741
Estonia	-0.14876	-0.14876
Greece	1.14121	-0.36632
Hungary	1.50349	-0.08549
India	-0.82818	2.14066
Indonesia	-1.44718	1.16317
Iran	-2.18470	-1.58836
Jordan	-1.92765	0.53328
Kenya	-2.07299	-0.21132
Korea, Rep.	1.29471	1.65264
Lesotho	-3.59893	0.66571
Malaysia	0.71195	1.81710

**TABLE D-6 (cont'd)**

Dimensions of Globalization: Initial Country Group Discriminant Scores, 1995

Country	Function 1	Function 2
Mauritius	-0.91932	-1.00279
Mexico	-1.14827	-1.30896
Morocco	-0.81670	-0.54242
Nicaragua	0.15356	1.12172
Pakistan	-2.22304	-0.09467
Peru	-1.67188	1.37366
Philippines	-0.89572	1.08087
Poland	0.33058	1.46828
Portugal	1.87580	-0.57924
Sierra Leone	-3.08534	-3.80860
South Africa	0.38578	0.08841
Spain	1.81302	-0.19140
Sri Lanka	-1.17557	-0.08861
Thailand	-0.27699	1.69381
Trinidad	-0.07887	0.55958
Tunisia	-0.66358	-0.41897
Turkey	-0.20040	1.46942
Venezuela, RB	-1.04807	0.39102
Yemen, Rep.	-1.71988	-0.68506
Group Average	-0.81094	0.13048

Note: Based on the Discriminant Analysis in Table B-4.

TABLE D-7

Dimensions of Globalization: Initial Country Group Discriminate Classification, 1995

	Initial Group	Model Placement				
		Group1	Group2	Group3	Group4	Group5
Australia	1.00	0.969	0.030	0.000	0.000	0.000
Austria	1.00	0.998	0.001	0.000	0.000	0.000
Finland	1.00	0.999	0.000	0.000	0.000	0.000
France	1.00	0.998	0.001	0.000	0.000	0.000
Germany	1.00	0.995	0.004	0.000	0.000	0.000
Iceland	1.00	0.868	0.126	0.004	0.000	0.000
*Korea, Rep.	1.00	0.083	0.903	0.007	0.005	0.000
Netherlands	1.00	1.000	0.000	0.000	0.000	0.000
Norway	1.00	0.994	0.005	0.000	0.000	0.000
United Kingdom	1.00	0.999	0.000	0.000	0.000	0.000
United States	1.00	0.963	0.036	0.000	0.000	0.000
Group Average		0.897	0.101	0.001	0.000	0.000
Argentina	2.00	0.001	0.499	0.390	0.108	0.000
Bulgaria	2.00	0.079	0.895	0.016	0.008	0.000
China	2.00	0.000	0.589	0.157	0.252	0.000
*Dominican Republic	2.00	0.000	0.357	0.374	0.267	0.000
Egypt	2.00	0.000	0.619	0.224	0.156	0.000
Estonia	2.00	0.002	0.660	0.247	0.089	0.000
Greece	2.00	0.209	0.742	0.041	0.006	0.000
Hungary	2.00	0.422	0.560	0.013	0.002	0.000
India	2.00	0.000	0.573	0.100	0.325	0.000
*Indonesia	2.00	0.000	0.242	0.253	0.504	0.000
Malaysia	2.00	0.010	0.949	0.018	0.021	0.000
*Mauritius	2.00	0.000	0.233	0.604	0.159	0.003
*Mexico	2.00	0.000	0.142	0.686	0.157	0.013
Nicaragua	2.00	0.002	0.864	0.070	0.062	0.000
Philippines	2.00	0.000	0.473	0.217	0.309	0.000
Poland	2.00	0.003	0.908	0.042	0.045	0.000
*Portugal	2.00	0.792	0.203	0.004	0.000	0.000
South Africa	2.00	0.013	0.839	0.109	0.037	0.000
*Spain	2.00	0.693	0.300	0.004	0.000	0.000
*Sri Lanka	2.00	0.000	0.247	0.461	0.290	0.000
Thailand	2.00	0.000	0.780	0.080	0.139	0.000
*Tunisia	2.00	0.000	0.404	0.432	0.161	0.000
Turkey	2.00	0.000	0.792	0.086	0.120	0.000
Group Average		0.097	0.560	0.201	0.140	0.001

**TABLE D-7 (cont'd)**

Dimensions of Globalization: Initial Country Group Discriminate Classification, 1995

	Initial Group	Model Placement				
		Group1	Group2	Group3	Group4	Group5
*Bolivia	3.00	0.000	0.184	0.381	0.434	0.000
Botswana	3.00	0.000	0.202	0.458	0.339	0.000
Cameroon	3.00	0.000	0.023	0.613	0.351	0.011
*Colombia	3.00	0.000	0.152	0.393	0.454	0.000
Cote d'Ivoire	3.00	0.000	0.062	0.487	0.449	0.000
Iran	3.00	0.000	0.020	0.670	0.203	0.104
Kenya	3.00	0.000	0.057	0.500	0.441	0.000
Morocco	3.00	0.000	0.326	0.493	0.179	0.000
*Peru	3.00	0.000	0.178	0.225	0.595	0.000
*Sierra Leone	3.00	0.000	0.000	0.001	0.000	0.998
*Trinidad	3.00	0.001	0.764	0.144	0.089	0.000
Venezuela	3.00	0.000	0.341	0.351	0.306	0.000
Yemen, Rep.	3.00	0.000	0.083	0.607	0.306	0.002
Group Average		0.000	0.184	0.409	0.319	0.086
Albania	4.00	0.000	0.105	0.239	0.654	0.000
*Costa Rica	4.00	0.000	0.298	0.442	0.258	0.000
Jordan	4.00	0.000	0.095	0.360	0.543	0.000
Lesotho	4.00	0.000	0.004	0.207	0.788	0.000
Pakistan	4.00	0.000	0.046	0.466	0.487	0.000
Group Average		0.000	0.110	0.343	0.546	0.000
Belarus	5.00	0.000	0.000	0.001	0.000	0.998

Note: Based on the Discriminant Analysis in Table B-4.

\*=misclassified country

Group 1 Average	0.897	0.101	0.001	0.000	0.000
Group 2 Average	0.097	0.560	0.201	0.140	0.001
Group 3 Average	0.000	0.184	0.409	0.319	0.086
Group 4 Average	0.000	0.110	0.343	0.546	0.000

**TABLE D-8**  
Summary of Initial Country Classification Results

		Classification Results <sup>b,c</sup>					Total	
		Predicted Group Membership						
Expanded Country Classification		1.00	2.00	3.00	4.00	5.00		
Original	Count	1.00	10	1	0	0	0	
		2.00	2	15	5	1	0	
		3.00	0	1	8	3	1	
		4.00	0	0	1	4	0	
		5.00	0	0	0	0	1	
	%	1.00	90.9	9.1	.0	.0	100.0	
		2.00	8.7	65.2	21.7	4.3	100.0	
		3.00	.0	7.7	61.5	23.1	7.7	
		4.00	.0	.0	20.0	80.0	0	
		5.00	.0	.0	.0	100.0	100.0	
Cross-validated <sup>a</sup>	Count	1.00	10	1	0	0	0	
		2.00	2	15	5	1	0	
		3.00	0	2	7	3	1	
		4.00	0	0	2	3	0	
		5.00	0	0	1	0	1	
	%	1.00	90.9	9.1	.0	.0	100.0	
		2.00	8.7	65.2	21.7	4.3	100.0	
		3.00	.0	15.4	53.8	23.1	7.7	
		4.00	.0	.0	40.0	60.0	0	
		5.00	.0	.0	100.0	.0	100.0	

a. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b. 71.7% of original grouped cases correctly classified.

c. 66.0% of cross-validated grouped cases correctly classified.

**TABLE D-9**

Dimensions of Globalization:  
Principal Components--Revised Country Classification, 1995

	Factor1 Structural Openness	Factor2 Global- ization	Factor3 Global Expansion	Factor4 Global Finance	Factor5 Global Structure
Trade (%GDP)	0.974*			0.127	
Expenditure (%GDP)	0.919*			-0.269	0.118
Trade (%Goods GDP)	0.891*	0.185		0.119	
Imports (%GDP)	0.882*			0.418	
Small Country Dummy	0.352	-0.131	-0.106	-0.282	-0.345
Gross PCF (%GDP PP)		0.885*			
Telephone Mainlines (1000 people)	0.884*		-0.130		
Revised Country Classification		-0.799*	-0.309	0.278	
Exports (%GDP)	0.283	0.669*		0.363	
Gross FDI (% GDP PP)	0.195	0.635*		0.478	0.263
Domestic Credit Banking System (%GDP)		0.508*	0.191	-0.193	-0.168
GDP Growth	0.115	-0.111	0.814*		
Import Growth			0.774*		
Export Growth		0.158	0.728*		0.206
Domestic Absorption (%GDP)	0.230	-0.181	0.108	0.869*	-0.183
Financing From Abroad (%GDP)			-0.335	0.621*	0.312
Oil Dummy		-0.221	-0.145	-0.253	0.658*
FDI New Inflows (%GDP)	0.179		0.240		0.620*
Domestic Financing (%GDP)	-0.277	0.289		-0.354	-0.554*
Sub-Saharan Dummy		-0.286	-0.299	-0.161	-0.392
Notes: Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization; Rotation converged in 15 iterations.					
* = Factor loadings 0.50 or greater; Due to missing values, 54 countries remained in the analysis					
Country Factor Score					
United States	-1.278	1.134	0.214	0.074	0.094
Group 1 Average	-0.294	1.618	-0.208	-0.023	-0.083
Group 2 Average	0.096	-0.117	0.706	-0.294	0.007
Group 3 Average	0.293	-0.629	-0.477	-0.308	-0.015
Group 4 Average	-0.280	-0.835	0.424	1.162	0.274
Group 5 Average	-0.036	-0.907	-3.458	0.299	-0.548

Discriminating Factors 2, 3 and 4

**TABLE D-10**

Dimensions of Globalization:  
Factor Scores--Revised Country Classification, 1995

	Factor1 Structural Openness	Factor2 Global- ization	Factor3 Global Expansion	Factor4 Global Finance	Factor5 Global Structure
<b><u>1.0 Endogenous Growth Countries</u></b>					
1.00 Australia	-0.677	1.191	0.236	-0.085	0.396
1.00 Austria	0.229	1.665	-0.325	-0.208	-0.387
1.00 Finland	-0.105	1.940	-0.037	-0.585	-0.764
1.00 France	-0.575	1.605	-0.194	-0.125	-0.494
1.00 Germany	-0.756	1.509	-0.298	0.008	-0.084
1.00 Iceland	-0.252	1.022	-0.885	-0.100	-0.069
1.00 Netherlands	1.085	2.861	-0.476	0.221	0.562
1.00 Norway	0.090	1.496	-0.282	-0.103	0.452
1.00 Portugal	-0.138	1.345	-0.251	0.474	-0.165
1.00 Spain	-0.867	1.104	0.063	0.030	-0.297
1.00 United Kingdom	-0.281	2.543	-0.255	0.120	-0.244
1.00 United States	-1.278	1.134	0.214	0.074	0.094
Group Average	-0.294	1.618	-0.208	-0.023	-0.083
<b><u>2.0 Catching Up Growth Countries</u></b>					
2.00 Argentina	-1.378	-0.110	-0.565	-0.015	0.601
2.00 Bulgaria	0.615	0.277	1.025	-0.667	-0.779
2.00 China	-0.692	-0.648	1.085	-0.556	0.362
2.00 Egypt	-0.548	-0.299	0.446	-0.096	-0.460
2.00 Estonia	2.273	0.051	-0.222	-0.112	0.586
2.00 Greece	-1.081	0.590	-0.143	0.067	-1.023
2.00 Hungary	0.335	0.866	-0.121	0.290	1.525
2.00 India	-1.392	-0.762	1.835	-0.259	-0.548
2.00 Kenya	0.114	-0.751	-0.058	-0.314	-1.275
2.00 Korea, Rep.	-0.286	0.063	1.431	-0.384	-0.105
2.00 Malaysia	3.468	-0.016	1.517	-0.993	0.605
2.00 Nicaragua	0.636	-0.029	1.029	0.252	-0.371
2.00 Philippines	0.221	-0.605	0.887	-0.311	-0.049
2.00 Poland	-0.577	0.003	1.256	0.095	0.245
2.00 South Africa	-0.497	0.006	0.285	-0.613	-1.412
2.00 Thailand	0.537	-0.423	1.453	-0.300	0.001
2.00 Trinidad	0.806	0.042	0.229	-1.039	3.052
2.00 Turkey	-0.820	-0.369	1.331	-0.342	-0.831
Group Average	0.096	-0.117	0.706	-0.294	0.007

**TABLE D-10 (cont'd)**

Dimensions of Globalization:  
Factor Scores--Revised Country Classification, 1995

	Factor1 Structural Openness	Factor2 Global- ization	Factor3 Global Expansion	Factor4 Global Finance	Factor5 Global Structure
<b><u>3.0 Primary Commodity Producers</u></b>					
3.00 Botswana	0.689	-0.619	-0.116	-0.475	0.539
3.00 Cameroon	-0.530	-1.065	-0.829	-0.558	-0.669
3.00 Costa Rica	0.793	-0.238	-0.066	-0.517	0.213
3.00 Cote d'Ivoire	0.290	-0.843	-0.193	0.116	-0.065
3.00 Dominican Republic	0.233	-0.737	0.046	-0.338	0.292
3.00 Iran	-0.687	-0.908	-1.580	-0.849	1.125
3.00 Lithuania	1.045	-0.474	-0.284	0.304	-0.026
3.00 Mauritius	2.539	-0.942	-0.763	-2.035	-2.490
3.00 Mexico	-0.364	-0.554	-1.572	-0.281	3.076
3.00 Morocco	-0.342	-0.304	-0.416	-0.160	-0.784
3.00 Sri Lanka	0.113	-0.598	-0.154	0.515	-0.621
3.00 Tunisia	0.715	-0.367	-0.455	0.250	0.091
3.00 Venezuela	-0.631	-0.661	0.116	-1.068	1.298
3.00 Yemen, Rep.	0.242	-0.493	-0.413	0.782	-2.193
Group Average	0.293	-0.629	-0.477	-0.308	-0.015
<b><u>4.0 Malthusian Economies</u></b>					
4.00 Albania	-0.919	-0.767	0.982	1.067	-0.626
4.00 Bolivia	-0.685	-0.729	0.096	0.964	1.302
4.00 Colombia	-1.019	-0.976	0.203	0.144	-0.325
4.00 Indonesia	-0.416	-1.340	0.564	-0.687	1.656
4.00 Jordan	1.443	-0.703	0.351	0.673	-0.225
4.00 Lesotho	1.564	-0.287	0.388	5.999	0.336
4.00 Pakistan	-0.992	-0.882	-0.154	0.419	-0.487
4.00 Peru	-1.218	-0.994	0.958	0.714	0.559
Group Average	-0.280	-0.835	0.424	1.162	0.274
<b><u>5.0 Isolated Economies</u></b>					
5.00 Belarus	0.773	-0.611	-3.448	-0.104	-0.424
5.00 Sierra Leone	-0.845	-1.203	-3.467	0.702	-0.671
Group Average	-0.036	-0.907	-3.458	0.299	-0.548

Notes: Based on factor analysis in Table B-9.

**TABLE D-11**

Revised Classification: Country Group Differences, 1995

**Group Statistics**

Revised Country Group		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
1.00	REGR factor score 1 for analysis 1	-.2939010	.61243764	12	12.000
	REGR factor score 2 for analysis 1	1.6184571	.57575972		
	REGR factor score 3 for analysis 1	-.2078325	.30767135		
	REGR factor score 4 for analysis 1	-.0232551	.25553476		
2.00	REGR factor score 1 for analysis 1	.0964128	1.23797490	18	18.000
	REGR factor score 2 for analysis 1	-.1174576	.43981624		
	REGR factor score 3 for analysis 1	.7057373	.72921171		
	REGR factor score 4 for analysis 1	-.2944551	.37880069		
3.00	REGR factor score 1 for analysis 1	.2933569	.85787312	14	14.000
	REGR factor score 2 for analysis 1	-.6292466	.24811066		
	REGR factor score 3 for analysis 1	-.4774113	.53920239		
	REGR factor score 4 for analysis 1	-.3081543	.72046903		
4.00	REGR factor score 1 for analysis 1	-.2805163	1.12767959	8	8.000
	REGR factor score 2 for analysis 1	-.8353101	.30123489		
	REGR factor score 3 for analysis 1	.4237757	.39900724		
	REGR factor score 4 for analysis 1	1.1619245	2.03162493		
5.00	REGR factor score 1 for analysis 1	-.0357425	1.14479775	2	2.000
	REGR factor score 2 for analysis 1	-.9076579	.41889719		
	REGR factor score 3 for analysis 1	-3.45786	.01331971		
	REGR factor score 4 for analysis 1	.2990089	.57093216		
Total	REGR factor score 1 for analysis 1	.0000000	1.00000000	54	54.000
	REGR factor score 2 for analysis 1	.0000000	1.00000000		
	REGR factor score 3 for analysis 1	.0000000	1.00000000		
	REGR factor score 4 for analysis 1	.0000000	1.00000000		

**TABLE D-12**

Revised Country Group, Discriminant Analysis, 1995

**Variables in the Analysis**

Step		Tolerance	F to Remove	Wilks' Lambda
1	REGR factor score 2 for analysis 1	1.000	63.722	
2	REGR factor score 2 for analysis 1	.965	65.137	.283
	REGR factor score 3 for analysis 1	.965	32.020	.161
3	REGR factor score 2 for analysis 1	.878	71.246	.209
	REGR factor score 3 for analysis 1	.963	31.454	.109
	REGR factor score 4 for analysis 1	.910	5.743	.044

TABLE B-13

Revised Country Group Comparisons, 1995

Pairwise Group Comparisons<sup>a,b,c</sup>

Step	Revised Country Group		1.00	2.00	3.00	4.00	5.00
1	1.00	F		124.402	187.177	165.709	62.723
		Sig.		.000	.000	.000	.000
	2.00	F	124.402		11.827	16.364	6.444
		Sig.	.000		.001	.000	.014
	3.00	F	187.177	11.827		1.239	.778
		Sig.	.000	.001		.271	.382
	4.00	F	165.709	16.364	1.239		.048
		Sig.	.000	.000	.271		.827
	5.00	F	62.723	6.444	.778	.048	
		Sig.	.000	.014	.382	.827	
2	1.00	F		63.715	99.034	81.168	73.534
		Sig.		.000	.000	.000	.000
	2.00	F	63.715		28.250	9.964	59.992
		Sig.	.000		.000	.000	.000
	3.00	F	99.034	28.250		6.717	27.416
		Sig.	.000	.000		.003	.000
	4.00	F	81.168	9.964	6.717		40.440
		Sig.	.000	.000	.003		.000
	5.00	F	73.534	59.992	27.416	40.440	
		Sig.	.000	.000	.000	.000	
3	1.00	F		43.587	68.769	68.846	51.718
		Sig.		.000	.000	.000	.000
	2.00	F	43.587		19.025	15.742	40.772
		Sig.	.000		.000	.000	.000
	3.00	F	68.769	19.025		9.672	18.691
		Sig.	.000	.000		.000	.000
	4.00	F	68.846	15.742	9.672		26.589
		Sig.	.000	.000	.000		.000
	5.00	F	51.718	40.772	18.691	26.589	
		Sig.	.000	.000	.000	.000	

a. 1, 49 degrees of freedom for step 1.

b. 2, 48 degrees of freedom for step 2.

c. 3, 47 degrees of freedom for step 3.

**TABLE D-14**

Dimensions of Globalization: Initial Country Group Discriminant Scores, 1995

Country	Revised Classification	Function 1	Function 2	Function 3
<b>Endogenous Growth countries</b>				
Australia	1.00	3.18345	-0.12064	0.12547
Austria	1.00	4.05381	-1.30783	0.09706
Finland	1.00	5.09488	-0.97610	-0.26922
France	1.00	3.95627	-1.04641	0.17167
Germany	1.00	3.58967	-1.16673	0.30221
*Hungary	2.00	1.97369	-0.54990	0.48355
Iceland	1.00	2.02319	-1.97912	0.10752
Netherlands	1.00	6.77843	-2.03538	0.79563
Norway	1.00	3.61379	-1.14691	0.17826
Spain	1.00	2.80250	-0.36684	0.23983
Portugal	1.00	3.01341	-0.96036	0.77755
United Kingdom	1.00	6.16844	-1.52922	0.61962
United States	1.00	2.96086	-0.11455	0.29023
Group 1 Average		3.78557	-1.02308	0.30149
Bulgaria	2.00	1.65539	1.56485	-0.70217
China	2.00	-0.67546	2.08394	-0.75787
Egypt	2.00	-0.41659	0.88664	-0.17385
Estonia	2.00	0.02855	-0.41889	-0.10708
Greece	2.00	1.35996	-0.49590	0.18949
India	2.00	-0.58977	3.45835	-0.47634
Korea, Rep.	2.00	1.26819	2.39083	-0.44489
Malaysia	2.00	1.37933	2.50110	-1.12598
Nicaragua	2.00	0.50284	1.81408	0.24150
Philippines	2.00	-0.80328	1.75303	-0.47707
Poland	2.00	0.80121	2.17132	0.07132
South Africa	2.00	0.46264	0.41607	-0.67412
Thailand	2.00	0.02372	2.64936	-0.44630
Trinidad and Tobago	2.00	0.69497	0.25380	-1.12982
Turkey	2.00	0.09847	2.41148	-0.47800
Group 2 Average		0.38601	1.56267	-0.43275

**TABLE B-14 (cont'd)**

Dimensions of Globalization: Initial Country Group Discriminant Scores, 1995

Country	Revised Classification	Function 1	Function 2	Function 3
*Argentina	2.00	-0.64577	-0.92673	-0.02264
Botswana	3.00	-1.43316	0.01303	-0.63180
Cameroon	3.00	-2.98930	-1.03087	-0.78783
Costa Rica	3.00	-0.42665	-0.07115	-0.60672
Cote d'Ivoire	3.00	-2.29496	0.04696	-0.02757
Dominican Republic	3.00	-1.67851	0.36061	-0.50885
Iran	3.00	-2.97168	-2.42579	-1.05440
*Kenya	2.00	-1.79426	0.18800	-0.48260
Lithuania	3.00	-1.50648	-0.24822	0.24946
Mauritius	3.00	-2.01838	-1.14413	-2.37517
Mexico	3.00	-2.31439	-2.49802	-0.36878
Morocco	3.00	-0.97367	-0.60380	-0.22102
*Pakistan	4.00	-2.49367	0.16561	0.29445
Sri Lanka	3.00	-1.82111	0.05491	0.45258
Tunisia	3.00	-1.33044	-0.59555	0.21601
Venezuela, RB	3.00	-1.13569	0.36123	-1.29153
Yemen, Rep.	3.00	-1.84143	0.40494	0.76958
Group 3 Average		-1.74526	-0.51522	-0.37628
Albania	4.00	-1.72621	2.14883	.99065
Bolivia	4.00	-2.17423	.59540	.90987
Colombia	4.00	-2.37746	.79073	-.03230
Indonesia	4.00	-2.70385	1.47181	-1.01731
Jordan	4.00	-1.81649	.98937	.59073
Lesotho	4.00	-2.98383	1.49985	6.46947
Peru	4.00	-2.16361	2.16429	.56431
Belarus	5.00	-3.77410	-5.68053	-.13735
Sierra Leone	5.00	-5.61320	-5.36095	.63055
Group 4 and 5 Average		-2.81477	-0.15346	0.99651
<b>1995 Summary:</b>				
United States		2.96086	-0.11455	0.29023
Group 1 Average		3.78557	-1.02308	0.30149
Group 2 Average		0.38601	1.56267	-0.43275
Group 3 Average		-1.74526	-0.51522	-0.37628
Group 4 and 5 Average		-2.81477	-0.15346	0.99651

**TABLE D-15**

Dimensions of Globalization: Revised Country Group Discriminate Classification, 1995

	Initial Group	Model Placement				
		Group1	Group2	Group3	Group4	Group5
Australia	1.00	0.988	0.011	0.000	0.000	0.000
Austria	1.00	0.999	0.000	0.000	0.000	0.000
Finland	1.00	1.000	0.000	0.000	0.000	0.000
France	1.00	0.999	0.000	0.000	0.000	0.000
Germany	1.00	0.999	0.000	0.000	0.000	0.000
Iceland	1.00	0.986	0.011	0.002	0.000	0.000
Netherlands	1.00	1.000	0.000	0.000	0.000	0.000
Portugal	1.00	0.997	0.002	0.000	0.000	0.000
Spain	1.00	0.976	0.023	0.000	0.000	0.000
United Kingdom	1.00	1.000	0.000	0.000	0.000	0.000
United States	1.00	0.976	0.023	0.000	0.000	0.000
Group Average		0.993	0.006	0.000	0.000	0.000
*Argentina	2.00	0.000	0.110	0.864	0.024	0.000
Bulgaria	2.00	0.004	0.994	0.000	0.000	0.000
China	2.00	0.000	0.893	0.033	0.073	0.000
Egypt, Arab Rep.	2.00	0.000	0.780	0.142	0.076	0.000
Estonia	2.00	0.000	0.551	0.428	0.018	0.000
Greece	2.00	0.208	0.748	0.041	0.001	0.000
Hungary	2.00	0.778	0.217	0.003	0.000	0.000
India	2.00	0.000	0.907	0.002	0.089	0.000
*Kenya	2.00	0.000	0.068	0.777	0.154	0.000
Korea, Rep.	2.00	0.000	0.998	0.000	0.000	0.000
Malaysia	2.00	0.000	0.999	0.000	0.000	0.000
Nicaragua	2.00	0.000	0.978	0.004	0.016	0.000
Philippines	2.00	0.000	0.794	0.068	0.137	0.000
Poland	2.00	0.000	0.992	0.001	0.005	0.000
South Africa	2.00	0.000	0.927	0.067	0.004	0.000
Thailand	2.00	0.000	0.976	0.003	0.020	0.000
Trinidad	2.00	0.001	0.937	0.058	0.001	0.000
Turkey	2.00	0.000	0.979	0.003	0.016	0.000
Group Average		0.055	0.769	0.139	0.035	0.000

**TABLE D-15 (cont'd)**

Dimensions of Globalization: Revised Country Group Discriminate Classification, 1995

	Initial Group	Model Placement				
		Group1	Group2	Group3	Group4	Group5
Botswana	3.00	0.000	0.108	0.814	0.077	0.000
Cameroon	3.00	0.000	0.000	0.974	0.025	0.000
Costa Rica	3.00	0.000	0.464	0.510	0.025	0.000
Cote d'Ivoire	3.00	0.000	0.017	0.699	0.283	0.000
Dominican Republic	3.00	0.000	0.108	0.716	0.175	0.000
Iran	3.00	0.000	0.000	0.987	0.001	0.010
Lithuania	3.00	0.000	0.0579	0.761	0.180	0.000
Mauritius	3.00	0.000	0.004	0.994	0.001	0.000
Mexico	3.00	0.000	0.000	0.993	0.002	0.003
Morocco	3.00	0.000	0.099	0.861	0.039	0.000
Sri Lanka	3.00	0.000	0.040	0.576	0.383	0.000
Tunisia	3.00	0.000	0.049	0.856	0.093	0.000
Venezuela	3.00	0.000	0.293	0.670	0.036	0.000
Yemen, Rep.	3.00	0.000	0.019	0.663	0.316	0.000
Group Average		0.000	0.090	0.791	0.117	0.001
Albania	4.00	0.000	0.057	0.014	0.928	0.000
Bolivia	4.00	0.000	0.017	0.184	0.798	0.000
Colombia	4.00	0.000	0.030	0.370	0.599	0.000
Indonesia	4.00	0.000	0.051	0.386	0.562	0.000
Jordan	4.00	0.000	0.066	0.170	0.762	0.000
Lesotho	4.00	0.000	0.000	0.000	0.999	0.000
*Pakistan	4.00	0.000	0.010	0.516	0.473	0.000
Peru	4.00	0.000	0.034	0.021	0.943	0.000
Group Average		0.000	0.033	0.208	0.758	0.000
Belarus	5.00	.000	.000	.000	.000	1.000
Sierra Leone	5.00	.000	.000	.000	.000	1.000
Group Average		.000	.000	.000	.000	1.000

\*=missclassified

**TABLE D-16**

**Classification Results<sup>b,c</sup>**

Original	Count	Revised Country Group	Predicted Group Membership					Total
			1.00	2.00	3.00	4.00	5.00	
Original	1.00		12	0	0	0	0	12
	2.00		1	15	2	0	0	18
	3.00		0	0	14	0	0	14
	4.00		0	0	1	7	0	8
	5.00		0	0	0	0	2	2
	%		100.0	.0	.0	.0	.0	100.0
	2.00		5.6	83.3	11.1	.0	.0	100.0
	3.00		.0	.0	100.0	.0	.0	100.0
	4.00		.0	.0	12.5	87.5	.0	100.0
	5.00		.0	.0	.0	.0	100.0	100.0
Cross-validated <sup>a</sup>	Count	1.00	12	0	0	0	0	12
	2.00		1	14	3	0	0	18
	3.00		0	1	13	0	0	14
	4.00		0	0	2	6	0	8
	5.00		0	0	0	0	2	2
	%		100.0	.0	.0	.0	.0	100.0
	2.00		5.6	77.8	16.7	.0	.0	100.0
	3.00		.0	7.1	92.9	.0	.0	100.0
	4.00		.0	.0	25.0	75.0	.0	100.0
	5.00		.0	.0	.0	.0	100.0	100.0

a. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b. 92.6% of original grouped cases correctly classified.

c. 87.0% of cross-validated grouped cases correctly classified.

## APPENDIX E

### Notes on NPS Research on Naval Forward Presence and the NDU Study on Globalization

#### David Denoon's Approach to Globalization

The research undertaken in the current study delves into many of the same issues recently addressed in a major NDU study on globalization (Richard Kugler and Ellen Frost, *The Global Century: Globalization and National Security*, Volumes 1 and 2, Washington: NDU Press, 2001). Because the NDU study comprises 49 somewhat independent essays, it is hard to define a "NDU position or view" on globalization. However, our study focuses on a common set of issues also discussed by David Denoon (Volume 1, Chapter 10) and in this case there is broad agreement. Patrick Clawson's observations on oil markets (Chapter 34) are also similar to the assumptions underlying the current study.

#### Definitions and Relevance of Globalization

Denoon defines globalization in a manner that is consistent with our use. According to Denoon, globalization means mean the creation of truly worldwide markets on the input side for labor, capital, and technology and on the output side for final products and services. While our study considered Robert Dunn's argument ("Has the U.S. Economy Really Been Globalized?" *Washington Quarterly*, Winter 2001) that stressed the fact that by many conventional measures the economy was more integrated into the world markets in the pre-World War I days, Denoon is correct in noting that even though trade accounted for a higher percentage of world GDP in those days, this fact is not central to addressing a number of current issues. Instead it is the change in the character and the extent of international interaction that make globalization today more intrusive and more important than the forms it took in the Victorian period (Denoon, p. 245).

#### Uniqueness of the Current Phase of Globalization

Denoon goes on to note that the key aspect of the current phase of globalization which makes it different from earlier periods is the speed with which orders for trade, capital, and technology are carried out. These elements make it much harder for governments to respond when a crisis develops. This fact may go a long way in explaining our findings concerning the manner in which globalization impacts on oil price shocks. One of the main patterns here (Table 41) was that the advanced industrial countries all experienced increases in the severity of oil shocks as their level of general globalization increased, while for the developing countries the reverse was the case.

Given the fact that there are theoretically a wide spectrum of public policy responses to oil price increases, either: (1) globalization places severe limits on the actually available; or (2) more broadly globalization creates a unique environment where despite the desire for national autonomy in policymaking, policy options carried out by governments have a similar impact. Dani Rodrick' framework (*How Far Will International Economic Integration Go?* *Journal of Economic Perspectives*, vol 14, no. 1 Winter 2000, pp. 177-186) outlined in Figure G-1 suggests that globalization has forced countries to make choices between three main areas, achieving integrated national economies, preserving the nation states or allowing for mass politics. The uniformity of oil shock outcomes found in the current study suggests that most countries have opted for preserving the nation state, while pursuing international integration. This would place severe limits on governmental responses to oil price increases tending to yield a fairly uniform set of outcomes across countries.

#### Country Classification Schemes

Our country classification scheme is similar to that proposed by Denoon. As we have defined them, Group 1 countries are largely synonymous to those Denoon refers to as industrial democracies or members of the Organization for Economic Cooperation and Development (OECD). All of these countries are intricately linked with the global economy. Our group 2

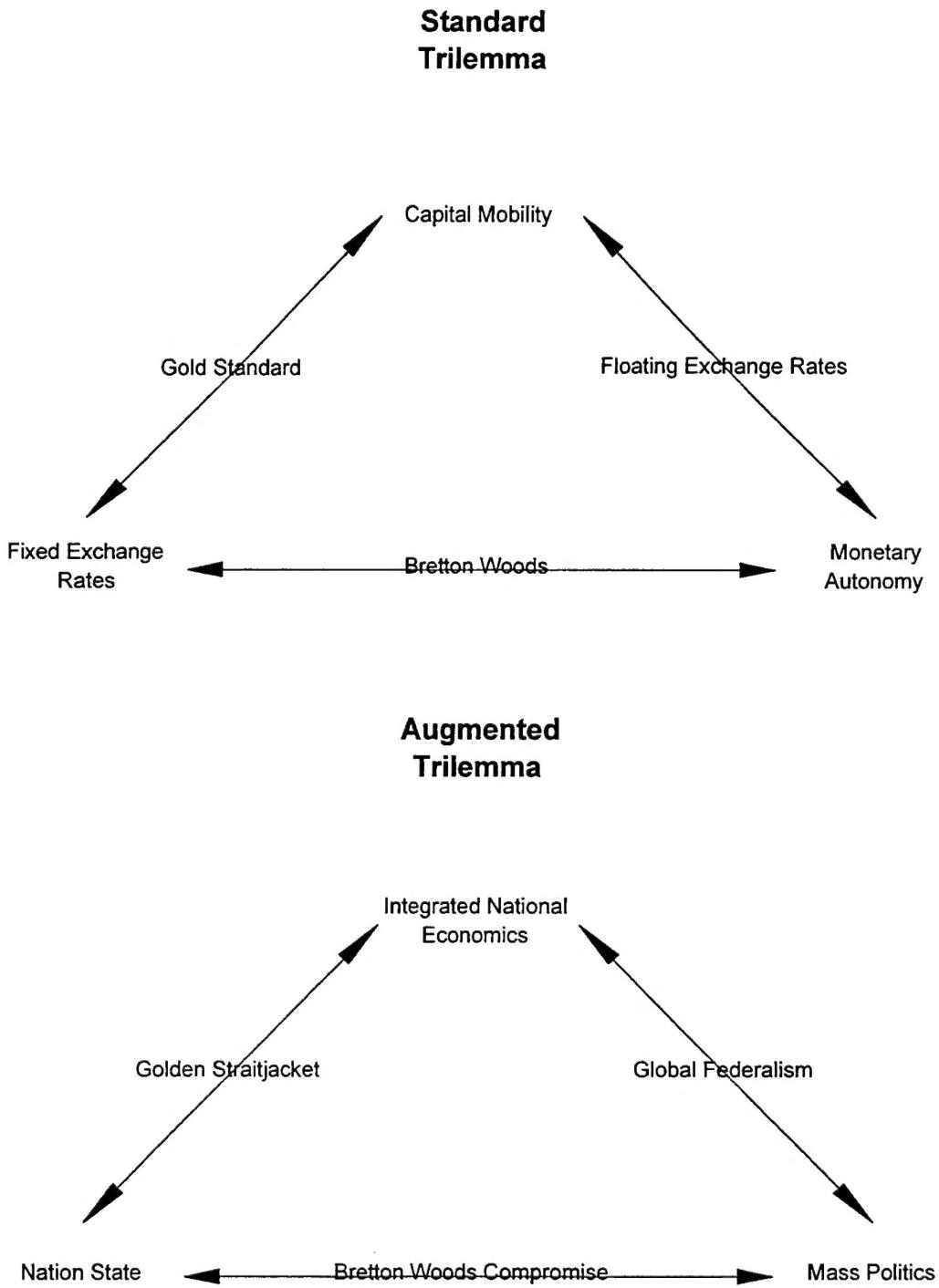
countries fall largely in Denoon's category of transition states or countries that are partially integrated within the global economy. According to Denoon, transition states are typically ones that have a vibrant modern sector of high per capita incomes and modern technology coexisting with a traditional sector of agriculture and extractive industries. Governments of the transition states, which include a mixture of authoritarian and democratic states, are often deeply ambivalent about how closely they want to be linked to the global economy and frequently attempt to limit the influence of outside economic, political, political or cultural influences. Finally his traditional states or countries are those in Asia, Africa, the Middle East, Latin America and parts of the former Soviet Union having low incomes, low levels of technical skills and only rudimentary links to the world economy. This group of countries is roughly the same as our primary producers (group 3), Malthusian (group 4) and isolated (group5).

Denoon's country and ours are fairly similar. Both identify groups of countries with an environment as defined by globalization. They also are designed so as to facilitate generalizations about policy goals and outcomes. However while we focus on the manner in which external shocks impact on these groups, Denoon addresses a different set of issues: (1) should lower income countries try to maximize their economic growth rates? How far should countries go in opening their capital markets? And (3) will greater integration with the global economy reduce or accentuate inequality within traditional and transitional states?

### **The U.S. Global Presence**

Our conclusions concerning the U.S. global presence and those of Denoon are also similar, although approaching the issue from a different perspective, although again, both approaches complement each other. Denoon notes (p. 248) that when considering U.S. security policy it is absolutely essential that the U.S. role in the world economy be appreciate as a key asset for leverage. "To put it bluntly, most of our allies and many of our antagonists need us far more than we need them."

**Figure G-1**  
**Globalization Forced Tradeoffs**



Source: Dani Rodrik, How Far Will International Economic Integration Go? *Journal of Economic Perspectives*, vol 14, no. 1 (Winter 2000), p.181.

While our study stresses the direct economic gains appropriated by countries as a result of the dampening effect on oil markets (and presumably other markets as well as demonstrated in our FY 2000 study), Denoon notes that while there is no question that the United States benefits from an open world economy, those countries that trade with the United States benefit even more. Here he gives China as an example.

In short Denoon notes that the size and openness of American markets is an enormous inducement for other countries to cooperate with the United States. The trade figures he cites are obvious examples. Unfortunately the benefits produced by Naval forward presence are much more subtle, though no less significant.

### **Importance of Oil in the Economy**

Finally, oil is another area where our findings on the increased severity of oil shocks which go against the conventional wisdom are complementary to Denoon's observations on natural resources. Denoon notes (p.249) that as the United States has shifted from an industrial to a service economy, the livelihood of its citizens depends less on imported raw materials than it did at the time of the Paley Commission (early 1950s). As Denoon notes the United States is less worried about chrome from East Africa or copper from Chile that it once was. Also, as materials science has become more sophisticated, it has yielded a host of synthetic products that can directly substitute for natural ones or prior manufactured ones. On the other hand, the principal exception is oil. As he observes, there is still no substitute for gasoline. Unless there are some unforeseen major technological breakthroughs, the United States will remain highly dependent upon imported oil and the world will be increasingly dependent on Persian Gulf oil.

### **Patrick Clawson's Observations on Oil Markets**

In our study, as in the one by Patrick Clawson (Chapter 34), the chief assumption is that oil markets are highly globalized and for that reason comparable oil price shocks confront most countries around the world.

### **Globalization of Oil Markets**

While our study concludes that globalization has tended to increase the severity of oil price shocks, Clawson asks the question of whether this globalization of oil markets has contributed to Western security—including making possible a safer and more prosperous future—or whether it has exacerbated its troubles. As he notes (p.727) the Western democratic community's reliance on imported oil is its most significant strategic vulnerability to turmoil in the rest of the world. Nearly all other resources—physical, technological, financial and human—are largely available within the Western democratic community, with the international flows of these resources being largely among the Western states. By contrast the West depends heavily on energy imports from areas that are outside the community of industrial democracies.

### **Reliance on Markets**

Despite noting the vulnerabilities of oil dependence, Clawson goes on to argue that energy globalization has generally been good for security: with effective policies and use of markets, the democratic community should be able to retain its access to vital supplies of oil and other energy.

As Clawson sees it, while the U.S. Government is a strong supporter of globalization it remains as it should unconvinced that globalization's market dynamics alone can guarantee full access to energy. More precisely (p. 740) while globalization has done much to provide a steady supply of energy at reasonable prices, it cannot be relied on as the sole guarantor of energy security. Energy resources are too concentrated in one region (the Persian Gulf), global energy markets have too mixed a record (sometimes exacerbating instability instead of dampening it) with irrational expectations often resulting in wider fluctuations than pure supply and demand factors would anticipate.

### **Oil Market Failures**

Reading Clawson's paper it is not entirely clear how he would compensate for these market failures in energy. The strategic petroleum reserve (SPR) would help in certain cases, but clearly not in all. Apparently he is reluctant to advocate more direct government involvement in the markets out of fear that policy makers will be driven by a number of conflicting goals (environment, economic growth, self sufficiency etc) leading to a poorly designed set of arbitrary market price ranges for petroleum products. Instead, he simply notes (p.741) that reliance on international markets can help greatly in ensuring that the future supply of oil and other energy resources meets demand at acceptable price. He does not, as our studies show look to naval forward presence as a stabilizing element, especially in situations involving conflict in the Gulf or in the major sea trading lanes.

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